

A

TREATISE

ON THE

DISEASES OF THE BREAST.

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PHILADELPHIA:

PRINTED BY A. WALDIE, 46 CARPENTER STREET.

1840.

DISEASES OF THE BREAST.

Glandular in its structure, composed of cellulo-fibrous partitions, of vessels and of nerves, surrounded by an adipose cellular tissue, endowed with intermittent or transitory functions, the breast is subject to all the diseases of other organs besides some peculiar to itself. Its developement, form, and functions as gland, are besides so different in the two sexes, as to require a separate study of its diseases in the male and female.

CHAPTER I.

DISEASES OF THE FEMALE MAMMA.

I shall include under two grand classes the affections of the female breast: 1. Inflammations and abscesses; 2. Different species of tumours or pains.

SECTION I.—*Inflammations.*

The inflammations of this gland comprehend, either primarily or secondarily, all excoriations, fissures, and the eczematous or porriginous affections of the nipple and its areola, the different species of erysipelas, and all the varieties of phlegmon and congestion.

ART. 1.—*Diseases of the Nipple.*

Nearly all the affections of the nipple are connected either with gestation or lactation; some, however, supervene without the presence of these two essential functions, and appear the consequence of the structure of the organ.

§ I.—*Excoriations.*

The greater part of women, who nurse for the first time, suffer, during the first weeks, from a softening, or a greater or less sensibility of the nipple. Rather often, even, the surface of this organ, continually moistened by the milk, and *chewed* by the mouth of the child, becomes *so tender* as to excoriate or moderately inflame—often also the root of the nipple separates itself, seems to be strangulated, and to be more particularly the seat of the excoriations, or of the ulcerations, which may be consequent upon them. This disease is recognised by the pain caused by nursing, by the sensibility and irritation complained of by the patient, by the red, granular, moist, excoriated and fungous appearance of the organ, and by the bloody oozing caused by the efforts of the child. It is observed more particularly in young women of a lymphatic or nervous constitution, or in those with a fine and delicate skin. It is moreover encouraged by too frequently repeated sucklings, a neglect of proper cleanliness, and a bad formation of the nipple. The disease is remedied in various manners: first, in presenting the breast to the child only at distant intervals, and in carefully covering its surface with soft, dry linen. If this do not suffice, the parts may be frequently bathed in Goulard's lotion, or a mixture in equal parts of oil and red wine if the pain be sharp, of oil and lime water if the tissues appear to require a more decided astringent. It is a condition easily remedied by lotions of salt water, pure wine, or even brandy.

Sir A. Cooper has great confidence, in these cases, in a mixture of borax one dram, alcohol half an ounce, and water three ounces. For my own part, in case of failure of the above remedies, the cucumber ointment, the poplar ointment,¹ or simple cerate, I have found nothing better than a weak solution of the nitrate of silver or sulphate of zinc. The ointment of the white precipitate, to be soon mentioned, is also an excellent remedy. But it must always be kept in mind that the suction of the child is the determining cause of the evil, and that the greater part of these remedies may give rise to accidents, if there be any remains of them upon the nipple when it is seized by the child. The best remedy therefore in these cases is a well applied artificial nipple. With the assistance of this latter, simple attention to cleanliness or any one of the local applications above mentioned, we rarely fail to effect a cure in a few days. Thus, lotions of brandy as preventive, of Goulard's lotion, of oil and lime water, with styptic solutions, the mild ointments or the white precipitate as remedies, and the use of a well made artificial nipple, are the resources, sanctioned by experience, against the tumefaction and excoriations of the nipple.

¹ The poplar ointment is a sedative application composed of poplar buds, poppy leaves, and belladonna as the principal ingredients. (P.)

§ II.—*Fissures.*

The numerous follicles, the natural folds of the skin, the intimate union of the different anatomical elements of the nipple, expose it to cracks or fissures most generally excited or caused by the excoriations just noticed. These fissures, due to the same causes as the excoriations, may exist on the different points of the areola of the nipple: but the nipple itself is their usual seat, along the groove which separates it from the breast, properly so called: torn and enlarged at each attempt at suckling, they extend indefinitely and become the cause of pain, drawing tears from the most courageous women and the most devoted mothers. These cracks are sometimes so extensive and so deep that the blood flows abundantly at each attempt at suckling. They extend sometimes so deep into the root of the nipple as to threaten the entire separation of this protuberance.

Besides the pain, these fissures interfere with the secretion of the milk, render sometimes lactation entirely impossible, and are the cause of decided inflammation of the whole breast.

For preventive or remedy we employ the same means as in the case of the excoriations. The employment of the artificial nipple is here still more imperative.

This disease, so disagreeable and so insupportable to nurses attacked with it, has induced surgeons into the employment of very active measures. Thus some have advised a solution of the white precipitate, or a *suspensum* of calomel in any mucilaginous solution. I have sometimes tried this latter remedy and with a good success. As for the other I think it deserves to be absolutely proscribed, from the imminent danger which must result to the child from the swallowing of the smallest particle. I should much prefer, as I very often practise, to carefully touch the whole extent of the disease with the nitrate of silver, once, or several times at intervals of a few days, rather than to leave so deadly a poison upon the nipple. Here, therefore, as in the case of excoriations, we have recourse either to the powder of lycopodium,¹ to sedative or astringent ointments, the artificial nipple, or slight cauterisations.

§ III.—*Scabby Degenerations.*

I have twice seen the nipple covered with a scabby affection, apparently intermediate between chronic eczema and psoriasis, occurring in ladies who had for a long time ceased nursing. The scabs, covering the organ, were of a grayish red in one case, of a grayish yellow in the other, rather thick, cracked, adherent, and generally any attempt at their removal was followed by a bloody oozing. In both cases the disease dated several years, accompanied with itching, but otherwise without any signs of inflammation.

¹ The powder of lycopodium is simply an absorbent. (P.)

The friction of the breast against the chemise or the corset appeared to have been the original cause. One of these patients was cured by the ointment of the white precipitate, the other, after the failure of all means, underwent the excision of the nipple.

§ IV.—*Eczema*.

I have several times seen a well marked impetiginous eczema, not only upon the nipple, but extending over nearly the whole breast. In one lady, the relation of a distinguished dentist of Paris, there existed such lancinating pains, with redness, thickening, and induration of the skin as to lead many to the diagnosis of a cancerous disease. In other cases it is only a simple eczema, or of a syphilitic nature, or a psoriasis, which spreads over the areola, like a large scabby or scaly disk, of a yellowish, grayish, or reddish and copper colour.

Besides the general treatment applicable to the disease here as elsewhere, the practitioner will find advantage in the use of baths, and an ointment of the white precipitate, one dram to an ounce of hogs' lard.

§ V.—*Erysipelas*.

On the breast the simple erysipelas, the vesicular, and the bullar present nothing peculiar, except perhaps a rather marked disposition to the diffused phlegmon. It is the same with the different grades of erythema. I have once, however, seen an inflammation possessing all the characters of the *erythema nodosum*, with this peculiarity, that precisely that one of the four subcutaneous tumours, which offered the least appearance of fluctuation, became a true purulent deposition.

The phlegmonous erysipelas, not to be confounded with the common inflammation of the breast, must not be forgotten. A young and strong woman, threatened for several days with an abscess of the breast, thought herself cured, when a simple erysipelas appeared on the inner side of the left nipple, and soon assumed a phlegmonous aspect; there was then tumefaction of the whole breast as in similar cases in the scrotum, eyelids, or labia; soon a large gangrenous patch appeared on the external half of the gland, and the patient succumbed in a few days; a serous pus was diffused among the lobules of the gland, and in nearly all the parts of the adipose cellular tissue. There were found large portions of gangrenous cellular membrane under the integuments, but nowhere any purulent collection. We must therefore be upon our guard against a similar inflammation whenever we see the whole gland tumefied and enlarged during the existence of an ordinary erysipelas. The only efficacious treatment in such a case, after general and local bleeding, would consist, as soon as the disease was sufficiently advanced, in numerous and deep incisions upon the dif-

ferent inflamed points threatening to pass into the gangrenous suppuration.

§ VI. *Congestions and Inflammations properly so called.*

The inflammations of the breast, described latterly by some authors, under the names *mastoitis*, *mastitis*, or *mammitis*, are so frequent, and followed by consequences sometimes so grave, as to demand our peculiar and careful study. The numerous examples, which I have observed, have, for a long time, induced me to divide them into several classes, and to found these classes upon the surgical anatomy of the breast, as I have elsewhere explained it. (*Surgical Anatomy*, 2d and 3d edit. vol. i.) Considered with regard to the seat of the inflammation, we should admit, I think, three kinds, the one having their origin in the gland itself, the second in the subcutaneous layer, and the third commencing in the cellular tissue under the gland; whence the following table.

1. Inflammation, superficial or subcutaneous.

a. Of the areola.

b. Of the adipose cellular tissue.

2. Inflammation, deep or submammar.

a. Idiopathic.

b. Symptomatic.

3. Inflammation, glandular.

a. Congestion of milk.

b. Inflammation proper.

ART. 2.—*Subcutaneous Inflammations.*

As in all the regions of the body the skin of the breast is separated from the organ beneath by one adipose cellular tissue, this layer, continuous with the subcutaneous fascia of the rest of the chest, as also with the submammar cellular tissue and the interlobular portions of the gland itself, gives to inflammations which may attack it certain peculiarities, the knowledge of which is of some practical value.

As it approaches the circumference of the mamma, it becomes firmer and more condensed, and presents fewer differences with the general subcutaneous fascia. Thus inflammations here pursue the same course as on the abdomen or extremities. As it advances towards the nipple, on the contrary, it becomes more and more thin, and deprived of its adipose matter, and finishes by being intimately confounded with the integument on the one hand and the gland on the other; hence inflammation here does not follow exactly the same course as exterior to the areola; allowing us to establish therefore two varieties of subcutaneous inflammation— inflammation under the areola, and of the adipose layer.

§ I.—*Inflammation of the adipose layer.*

The inflammations of the *adipose tissue*, proper, of the mamma, follow the laws of phlegmon in general. Acute, or chronic, they comprehend sometimes a large extent of surface, and resemble, in a certain degree, the phlegmonous erysipelas, but most generally they are confined to some isolated points of the surface of the breast. They are recognised by a greater or less degree of tumefaction, pain, heat, and redness of the part. The tumefaction appears from the commencement, and never raises the gland as in one of the species, which I shall soon notice. It appears as if one or more points of the mamma were tumefied under the skin, and that the nipple was more or less depressed.

The integuments are reddened from the commencement, and all the other symptoms are exactly those of common subcutaneous phlegmon. If the inflammation be but slight in extent, there is little febrile or nervous reaction. In the contrary case, there is sometimes a rather intense fever, of an angiotonic or inflammatory character. This kind of inflammation originates in three principal ways, proceeding from without inwards, from within outwards, or arising primarily in the subcutaneous layer itself.

The first of these kinds originates in an erythema, an erysipelas, the eczema, the impetigo or the psoriasis, to which the skin of this part is liable. All the cutaneous irritations, the frictions of the chemise or the corset, a blister, cupping glasses, a burn, may, as I have seen, be also the determining causes. In fact it is easily conceivable, that the irritation may pass from the integuments into the subcutaneous layer, where finding a less dense tissue it the more easily establishes itself. The subcutaneous inflammation of the mamma is possible therefore at all periods of life, whether the woman is pregnant, or is past the period of the generative function.

The second kind of inflammation is connected nearly always with a previous disease of the secreting tissue. Thus the swellings from retention of milk, irritations of all sorts, the different diseases, acute or chronic, to which the gland is subject, spread towards the surface and result in inflammation of the subcutaneous layer. Besides, it is rigorously possible that contusions, or compression acting primitively upon the front of the gland, may originate an inflammation advancing from the deep-seated to the superficial parts.

Inflammation may exist primarily in the substance of the subcutaneous layer, as elsewhere, arising either from external violence, or under the influence of internal predispositions, commonly called spontaneous. However, whatever may be the original cause of the inflammation, it always progresses in the same manner, presenting constantly the symptoms which we have indicated above.

The subcutaneous inflammation of the mamma is recognised by characters of which I have already spoken, and distinguished from

the erysipelas by the tumefaction, which is fixed and situate between the skin and the gland; by the redness, which is regular, rosy, violet or brownish; by the pain and heat which are dull and superficial; by the absence of those patches of a reddish yellow terminating abruptly; by a *festooned* border, and the sharp and biting heat, by which erysipelas is nearly constantly accompanied. It is distinguished from the inflammation of the absorbents, by the absence of any reddish lines proceeding towards the neck or axilla; from phlebitis by the absence of the irregular tremblings and the symptoms of purulent absorption: from the diffused phlegmon by its circumscribed limits, the nodosities and the slight tumefaction consequent upon it. It terminates nearly constantly by resolution or suppuration. The induration, gangrene, or degenerations, which may result from it, will be the subject of future study. Its duration is of course very variable, being dependant upon its intensity, extent, and the individual predisposition of the patient. Abandoned to itself, it is rare that it does not terminate by suppuration; and whether it terminate by resolution or abscess, it seldom arrives at its term in less than from six to fifteen days. As I shall consider in a separate section the abscess of the breast, I have only spoken here with regard to the inflammatory stage.

Treatment.—Prevention, here or elsewhere, consists in the removal of predisposing causes. To combat the scaly, erythematous, erysipelatous affections,—all irritation of the integuments, in fact, which may involve the parts beneath,—is evidently the first indication for the practitioner. As for the curative treatment, it is the same as in subcutaneous inflammation in general. If the woman be young, sanguineous, and robust, it will be advisable to practise one or several venesections. If there be no general reaction, but the inflammation be somewhat intense, from fifteen to forty leeches should be applied to the seat of the disease. In this case, it will be found more advantageous to apply the leeches upon the inflamed part than to place them around the base of the breast. Supposing that the suppuration be not yet inevitable, it will be well to repeat, twice or thrice, in the space of some days, this local bleeding. Linseed meal poultices placed directly upon the part, sprinkled at first with landanum and afterwards with Goulard's solution, ought to be employed in conjunction with the local bleedings. It is essential, also, that the breast be properly supported,—gently raised, for example, by means of a bandage, and that the patient lie as much as possible on the opposite side. This is a precaution which appears to me very important, especially in cases where the weight of the organ or the situation of the disease appear to concur in the stagnation of the fluids in the inflamed region.

If these means should be contra-indicated by any especial circumstances, there may be some chance of abortion of the inflammation, in having recourse from the commencement to abundant and numerous mercurial inunctions. Here, also, a well-exercised compression sometimes succeeds marvelously; only it must be

remembered that the compression is often very difficult of maintenance, requiring all the care of the surgeon, and that many patients cannot support it at all.

I have succeeded several times in arresting the subcutaneous inflammation, in covering the whole seat of pain with a transitory blister: but as this does not always succeed, and there is something in it frightful to the patient, I should not advise its employment, unless in want of better means.

As constitutional treatment, it is well to act with some energy upon the intestinal canal: the bowels must be kept open by enemata and laxative drinks. These latter, however, should be relied upon only in inflammation from some external cause: we must, on the contrary, have recourse to the more active purgatives, as castor oil, jalap, scammony, or senna in the case of a nurse, or a woman in the puerperal state. I need not add, that if there be any co-existing herpetic affection, either as cause or complication, it is to be treated by the appropriate remedies.

The employment of calomel or the tartar emetic, latterly so vaunted by some practitioners, has, in my own experience, appeared of but little use in the present kind of inflammation. These remedies will be the subject of future notice.

If after the first antiphlogistic remedies, the inflammation appear to incline to resolution, the practitioner must persevere either in the local bleedings and the purgatives, or topical discutient applications and compression. In the contrary case, when the tumefaction persists, and threatens suppuration, recourse must be had to the general treatment of abscess, suspending entirely the depletion. It is well, however, to know that after five or six days' continuance, the resolution of an acute inflammation of the subcutaneous tissue of the breast is nearly impossible, and that it is entirely irrational to continue the attempts at resolution as soon as the existence of pus is at all probable.

§ II.—*Inflammation of the Areola and the Nipple.*

In that part of the breast occupied by the areola and nipple, the tissues are so condensed that it is difficult to distinguish between a purely subcutaneous inflammation and one purely glandular or parenchymatous. Nevertheless, it is rather common to meet with an inflammation under their disk, characterised by a tumefaction containing small hard lumps, by dull and lancinating pain, with protuberance of the nipple, or a conical aspect of the whole breast. This variety of inflammation, nearly always consequent upon ulcerations, fissures, or some other irritation of the skin, and which is seldom met with, unless in nurses, has the peculiarity of a rapid tendency to resolution upon the removal of the determining cause, or the application of a proper treatment from the commencement, as also that it terminates very quickly by small centres of suppuration, generally several in number, irregular in their form,

and proceeding very rapidly to a spontaneous opening. This inflammation is combated by the means pointed out for the treatment of the excoriations, fissures, and other cutaneous affections of this part. It is well to add to these, general bleeding and some purgative, as well as emollient poultices, and leeches. But in this case, the leeches should be applied either around the base of the breast or around the areola, and not immediately upon the inflamed part, as in the other variety of the inflammation.

ART. 3.—*Submammar, or deep-seated Inflammations of the Breast.*

Instead of the form of an interlaced network, the cellular tissue, separating the mamma from the pectoral muscles and the sterno-costal cartilages, assumes the form of thin leaf-like plates, authorising its comparison with the deep-seated cellular tissue of the abdomen and muscles. Hence it results that an inflammation established here has a great tendency to assume the form of diffused phlegmon. Ever so little acute, in fact, they seldom fail of including the whole space, supporting the base of the gland. They are distinguished in this from the subcutaneous inflammations, which appear ordinarily under the form of tumours or reliefs, more or less exactly circumscribed at the surface of the breast.

The submammar inflammations, as the subcutaneous, originate from three different causes, most generally from some irritation of the gland itself, an irritation which extends inwards towards the walls of the chest. At other times, they recognise as cause some disease of the chest, as violent pleurisy was very evidently the origin in one woman whom I observed. In several individuals I have seen this inflammation supervene upon effusions of pus, blood, or serosity into the cavity of the chest. Sometimes, also, it originates in an organic alteration of the chest, a vomica, or a tuberculous affection, for example: a fracture of a rib may produce the same effect. The same, also, may result from caries and necrosis, and in a word from any lesion of the thoracic parietes, directly in connection with the gland.

The commencement of submammar inflammation in the tissue which is its seat, is rather rare. It is only in case of a broken down constitution, under the influence of general unknown causes, or spontaneously, as is said in the schools, that this deep-seated inflammation manifests itself: so that a submammar inflammation indicates previous disease of the gland itself, of the chest, or some general constitutional affection. It is not less true from this, that a host of external injuries, blows of all kinds upon the gland or chest, may be its origin, without leaving any trace in the gland or thoracic parietes.

This deep-seated inflammation is recognised and distinguished from the subcutaneous by several symptoms: thus, it is generally accompanied by a reaction, a sharp inflammatory fever, a consider-

able tumefaction, which invades the whole region, and serves to push the gland from the front of the chest. The whole breast appears distended, smooth, hemispherical, and traversed by large veins. The integuments are hot, slightly red, and when pressed towards the chest the gland gives the sensation of reposing upon a sponge. The patient complains of dull, deep-seated, heavy pains, which are not increased upon any slight pressure of the surface. Externally there is no appearance either of the little lumps of inflammation, or of the spongy, livid, or simply red patches.

The progress of the submammary inflammation is generally rapid. In two, three, four, or five days, it arrives at its maximum of intensity, and forty-eight hours are sometimes sufficient to double or triple the natural volume of the breast. The termination is most usually by resolution or suppuration, sometimes by gangrene of the cellular tissue, as in phlegmonous erysipelas; but never, or almost never by induration. It must be granted, however, that resolution is rather rare, a fact easily conceivable, as it requires only from three to five or six days to determine a well-marked suppuration.

If the treatment of the deep-seated inflammations should be the same in substance as in the other variety, it should certainly be modified in its details. Thus, general bleeding should be largely practised and repeated at short intervals, if there appear any chance of obtaining an abortion of the inflammation: in this case, also, the leeches must be applied around the base of the gland, and not at its surface. The discutient ointments, mercurial or ioduretted, are of no, or very little assistance, the seat of the disease being too far removed to be under their influence. Poultices, emollient, narcotic, or resolute, exert also but a very slight curative effect. The same may be said of compression, and I should hardly have the courage to apply the transitory vesication.

Internal remedies, calomel, tartar emetic pushed to a high dose, or repeated purgatives, are more decidedly indicated, and have appeared to me very clearly useful in this as well as in the species of inflammation mentioned above. It must, however, never be forgotten that suppuration, once established, destroys the utility of these remedies, and that after a clearly acute inflammation of four or five days' duration, suppuration has nearly constantly taken place.

ART. 4.—*Inflammations of the Mamma proper.*

The mammary gland is subject to divers inflammations, which many authors have included under the one general term, parenchymatous tumefaction of the breast. These tumefactions, although appearing here as elsewhere under the influence of a blow, mechanical irritation of any kind, an internal cause, or various organic movements, are almost always connected with the period of lactation. Those which result from blows, falls, or mechanical irrita-

tions, are situate in the interlobular cellular tissue, in the glandular tissue, or, which is much more rare, in the lactiferous ducts themselves. The tumefactions from an internal cause commence sometimes in the milk ducts, sometimes in the secreting tissue, and sometimes in the fibro-cellular element. Those from the secretion of the milk commence generally in the lobular masses of the gland, or in the interior of the canals. It is not rare, moreover, to see the inflammation invade primarily the cellular tissue which surrounds and unites all the other elements of this organ. Hence it follows that the mamma is subject to three distinct kinds of inflammation; of the fibro-cellular divisions and filaments, of the secreting lobular, and of the lactiferous ducts.

§ I.—*Congestion of the lactiferous Ducts.*

The tumefaction of the breasts observed in women just delivered, in the last months of pregnancy, and in nurses, is due to the fact that the milk retained in the ducts, and there thickened and concreted, gives rise to the distention, and is the cause of quite sharp pains, and even a decided constitutional reaction. In such a case the breast is swelled, as in the submammary inflammations, but instead of appearing raised, and covered with smooth and tense integuments, it is as if hardened and studded with knotty points. Although hot and sensible to the least pressure, the region of the breast is only moderately reddened: the integuments are sometimes even paler than natural.

This kind of tumefaction, which I have often observed in nurses, is actually only a retention of milk, either liquid or concrete, in the canals devoted to its excretion. In my view, it does not constitute an inflammation, but becomes easily and often the cause of one. It originates frequently in the sudden changes from heat to cold, in a too abundant secretion, or a too long retention of the liquid in the gland. Thus, we see it supervening in nurses who carelessly expose the breast to the air in presenting it to the child, or who only nurse after long intervals, as well as in those in whom the *secretion of the milk* takes place, as it were, in paroxysms, or upon whom the child exercises a too hurried suction. It is easily conceivable that the abuse of stimulating liquors, signalled by Sir A. Cooper, that all the different errors of diet, as well as internal diseases, may exert an active influence in its appearance.

Abandoned to itself, this tumefaction may terminate in the re-establishment of the excretion, or by resolution, in a greater degree of irritation, or in a true inflammation, spreading, perhaps, to the substance of the gland, and finally in suppuration of the part, or in decomposition of the milk.

We remedy it by presenting the breast oftener to the child, or in emptying it by artificial suction, either by the mouth of an adult, of a young animal, or by a cupping-glass *ad hoc*, and by giving a better direction to the efforts of the child, or even of the woman.

Soft linens or wadded cushions, applied very hot upon the part, aid very much the preceding precautions, at the same time that we prescribe, if possible, a more regular regimen, or attack, by appropriate remedies, any internal disease that may exist. It will only be in the case of failure of these means that we shall be obliged to recur either to topical or general remedies. Moreover, it is only for this kind of tumefaction that I would allow the employment of certain liniments which have acquired a great reputation with the vulgar, and even with some practitioners. That of M. Ranque, (*Journ. de Progres*, v. xiv.) composed of laurel water ℥ij., extract of belladonna ℥ij., ether ℥j., and which is highly praised by M. Conty de la Pommeraiie, (*Arch. Gen.* v. xx. p. 591,) would be dangerous, for example, in true inflammation of the breast, whilst in simple tumefaction from retained milk, I have often found it of incontestable utility. The same may be said of the liniment of ammonia, oil, and camphor, so highly lauded by Sir A. Cooper. The formula which has best succeeded in my hands, is one or two yolks of eggs, ammonia ℥j., camphor ℥ss., to which I add sometimes the same quantity of ether. In anointing the breast four or five times a day with one or the other of these preparations, we, in general, speedily obtain a fluidification of the milk, and a very manifest diminution of the size of the part. But I must insist that, in a case of superficial or deep-seated inflammation, such topical applications can only aggravate the evil.

Supposing the irritation to be already great, that there exists a certain degree of febrile reaction, and that the woman cannot continue to nurse, we must not hesitate to practise venesection, to exhibit purgatives, and to cover the whole breast with a large emollient or sedative poultice.

§ II.—*Inflammation of the glandular Tissue, and of its investing cellulo-fibrous Element.*

Whether the inflammation of the cellular tissue, or the lobules of the mamma, originates in these organic elements, or is the consequence of a distention of the lactiferous ducts, it presents in both cases the same symptoms. Like the tumefaction discussed above, it is seldom remarked except in nurses, pregnant women, or those just delivered. It is thus the species of inflammation most commonly determined by lactation or the puerperal state. It announces its existence by pain and swelling, scattered here and there through the thickness of the part. The redness of the integuments is not at first very vivid, and the mamma does not immediately acquire a very great size. The gland does not appear raised: the finger recognises in its substance only some painful knotty points, gathered more particularly around the areola, and accompanied by a more or less vivid redness of the skin which covers them. The pain is dull and slightly lancinating, but it is not pulsative as in the sub-

cutaneous, nor gravitating and diffused as in the deep-seated inflammations.

The disease, having its seat in the glandular lobules, or in the fibro-cellular bands and partitions, which communicate one with the other; and are continuous besides with the cellulo-adipose tissue in front, and the lamellated cellular tissue behind the gland, is peculiar in presenting itself nearly always in distinct nodules, as well as in its great tendency to a complication with the subcutaneous or the submammar inflammations, or with both these species combined. I will add that its progress is less rapid than either of the other species, that suppuration rarely results before the eighth or tenth day, and that if it can terminate by resolution or suppuration, it quite often also leaves behind it a true induration. As it may pass by continuity of tissue from one partition, from one band, from one lobule to another, it is not astonishing that it endures two, three weeks, a month, and even more, before a definite termination.

The prognosis is consequently graver than in the inflammations purely cellular, whether superficial or deep-seated.

The first question that arises in a case of this kind is, shall we or shall we not continue lactation? But this question, only applicable to nurses, involves another, the advantages or disadvantages of the secretion of the milk in such a case? During pregnancy, the child cannot be given to the breast, and suckling cannot be prescribed as a remedy. It is the same with women lately delivered, and who are unable or unwilling to nurse; so that for these, at least, it is better to diminish the secretion, than attempt the excretion of what tends to form in the breast. In such a case, therefore, we have recourse to general bleeding, often repeated rather than very abundant, to leeches applied upon or around the breast, saline purgatives, strict diet, baths, and topical applications, at first emollient and narcotic, and afterwards resolutive, or slightly excitant. In these cases a well-applied compression is very useful, but the mercurial inunctions have appeared to me the least efficacious. It is also in similar cases that the alterative decoctions, of periwinkle and the like, or Weiss whey, have been especially esteemed.

If however we have to do with a nurse who has only one breast attacked, it will be better to present the child only to the healthy side, and to employ the suction pump upon the affected breast during several days, and to cover the part with linseed meal poultices. As soon as the inflammatory symptoms subside, that is to say at the end of three, four, or five days, it is well to present again the affected breast to the child, being careful not to leave it there long, but to present it at short intervals, washing the parts with warm water and continuing the topical emollients. In such a case loss of blood, purgatives and the alterative infusions should be carefully avoided, unless very especially indicated. The bowels should be kept free by enemata, or some laxative drink, and the nourishment should be a little less stimulating than ordinary.

§ III.—*Abscess of the Breast.*

The most common termination of the inflammation just noticed, the abscess, whether acute or chronic, may be also divided into three classes, according to its seat or point of departure—that is to say, they appear primitively: 1. In the subcutaneous layer. 2. Between the gland and the thoracic parietes; or 3. In the tissue of the gland itself. I propose therefore to class them as follows:

1. Superficial abscess.
 - a. Of the areola.
 - b. Of the adipose tissue.
2. Deep seated abscess.
 - a. Idiopathic.
 - b. Symptomatic.
3. Glandular abscess.
 - a. Primitive.
 - b. Secondary.

Perhaps it is from not attending to this division entirely anatomical, that authors do not agree better, especially as regards abscess of the breast in general. The remainder of this article, if I do not deceive myself, will show that it is a means of throwing some light upon a question hitherto very vague and obscure.

ART. 4.—*Superficial or Subcutaneous Abscess.*

This class includes two divisions, abscess of the areola and of the cellulo-adipose tissue.

§ I.—*Abscess of the Areola.*

Inflammation around the areola, when it terminates by suppuration, gives rise to small collections, generally several in number, nearly always globular, and which rarely exceed in volume a filbert or the half of an egg. Compressed from behind by the glandular tissue, these purulent deposits progress in front the more easily, as the integuments are naturally very delicate and yielding: situate in a tissue which is reticulated rather than lamellated, they spread with considerable difficulty, and are therefore generally very exactly circumscribed. The peculiar nature of the region of the areola, as well as the presence of so many lactiferous ducts allow these little abscesses to exist in considerable number as so many distinct purulent collections. They are recognised primarily by the previous existence of an acute inflammation, and secondarily by the presence of painful nodosities, of a livid or bluish tint, covered with a smooth, tense integument, and giving an evident sensation of fluctuation. When in addition the woman experiences pulsations, heat, and a dull pain attended by a febrile paroxysm, we may be sure that some one of these little nodosities, around the nipple, is filled with pus. We must however guard against decep-

tion from the natural inequalities, certain dilatations of the milk ducts, the timid state of the breast natural to some women, or from the folds or slight tumefactions consequent, at times, upon lactation too long prolonged or too often repeated.

A good means of diagnosing the fluctuation, in such a case, consists in the compression of the breast, in one of its great diameters, with the fore-finger and thumb of one hand, while the other examines the inflammatory tumefaction by pressing from before, backwards. If pus really exist, the point of the breast thus made to project will be found depressible, distended like a small bladder, while the surrounding nodosities will give the sensation of a sponge or solid body. This compression gives to the true abscess a livid hue, or smooth appearance, a tension and a *flexibility*, entirely distinct from any purely inflammatory protuberance.

Abandoned to themselves the abscesses of the areola, which may be also called *tuberos*, may rigorously give rise to the same state in the gland itself or in the rest of the subcutaneous tissue. In reality, however, they almost always terminate by ulceration of the integuments and by appearance externally. Produced generally by irritations, chaps or fissures of the nipple, they can only be prevented by an early attention to these, and their peculiar treatment is reduced to very little. If the nipple be not very near and the lactiferous ducts appear unimplicated, their existence does not demand the removal of the child. In the contrary case, it is better to extract the milk by artificial means than to continue the nursing.

The whole question is, whether we should open these deposits ourselves, or wait their spontaneous evacuation. Undoubtedly nature, unaided, would easily triumph over one of these abscesses of the breast; but it is very evident that the integuments having become thin and separated from the parts beneath, the cavity could not assume a healthy action so immediately as if surgery should lend its timely aid to the efforts of nature. I am of opinion, therefore, from numerous observations, that these little abscesses should be opened with the knife, upon the least appearance of the existence of pus. In my idea, there would be less inconvenience in plunging the lancet into an inflammation not yet suppurated, than in leaving one of these abscesses to open of itself. The opening should be sufficiently large to admit the immediate and complete evacuation, by the aid of a slight pressure.

However, whether opened or not, they require no other topical application, except an emollient cataplasm, especially one of linseed meal. By the aid of poultices, these tuberos abscesses of the breast, opened by a lancet or bistoury, contract and cicatrise in a very few days.

§ II.—*Abscess of the cellulo-adipose layer.*

Without the areola the subcutaneous or cellulo-adipose abscesses follow the same progress, and with the same symptoms, as in the

extremities, abdomen, or rest of the chest. As their seat is in a tissue purely reticular, like the general subcutaneous fascia, they have a constant tendency to limitation. It is only then by exception that they extend in breadth, either upon the surface of the mamma or of the chest beyond its circumference. These abscesses, however, often attain a considerable size; that of an egg for example, or even that of the fist, or the half of an infant's head. They are observed generally upon the external and inferior half of the breast, although it is not rare to meet them upon its upper and inner part. Women, who have the breasts large and pendulous, present hardly any but these two species, dependent upon the position of the part in the first, and upon the traction of the gland by its weight upon its root in the second. Generally abscesses of this kind are solitary; sometimes, however, there are two or even more. I have seen as many as six in a woman who had been attacked with *erysipelas fugax*; and another presented four after an *erythema nodosum*. When there are several, their base is generally soft and regularly circumscribed; the integuments are equally thin in the whole extent, and the abscesses appear seated in the most superficial part of the subcutaneous fascia. A solitary abscess softens insensibly from the centre to the circumference, preserving a hard and generally ill-limited base. The conical form is more peculiar to this solitary abscess, the others being globular, hemispherical, or elliptical. Upon the whole, they have an equal tendency towards the glandular tissue or thoracic parietes, as towards the cutaneous surface.

Their existence is announced by the signs of phlegmon in general, by the protuberance, the tenuity, and livid or bluish tint of the skin upon points previously inflamed. To establish the fluctuation, the part should be held firmly against the chest with the left hand while the right, aided with one finger of the other, examines the tumour. The same result may be obtained by grasping the breast in one of its long diameters, as I have explained in speaking of the tuberos abscess.

Any doubt upon the diagnosis can only exist in women who are very corpulent, or have at the same time the breasts distended by the secretion or perhaps a retention of the milk. In such cases in fact the redness of the abscess may be confounded with that of the physiological tumefaction, and the fluctuation may be so obscure, as to be easily confounded with the natural spongy feeling of the breast in this state. The error will be avoided, however, if we remember that the abscess will have been preceded, for about a week, by an inflammation accompanied by a dull and permanent pain, a protuberance, redness and tenuity of the integument, existing constantly in the same point, without any similar appearance in the rest of the breast.

The subcutaneous abscesses almost never disappear by absorption or metastasis; they open by destroying the tissues from the interior, like other phlegmonous abscesses, if art does not come to

their aid. This spontaneous opening takes place sometimes sooner, sometimes later; in some cases as early as the tenth day, yet I have seen it delayed as long as a month. Thus left to itself, the pus may extend in various directions, towards the axilla, the hypochondrium, or epigastrium, remaining always subcutaneous like the true diffused phlegmon. There is danger also that when it is near the circumference of the gland, it may implicate the deep-seated cellular tissue, and thus the subcutaneous be complicated with the submammar abscess.

This kind of deposit requires still less than the other the suspension of nursing. The gland being entirely free from the disease, may continue its functions without any real danger to the child: the tumefaction, consequent upon any retention of the secretion, would not fail to augment the irritation of the abscess.

The opening of these cellulo-adipose abscesses should be abandoned to nature only in those women who obstinately refuse the aid of the knife. In such a case I have sometimes succeeded in the absorption of the pus, by means of a transitory blister, repeated in six or eight days—the parts, in the mean time, being anointed morning and evening, with ointments of the iodide of lead or the mercurial. The blister has the additional advantage in this case, as in all other inflammations, of hastening the suppuration if it be inevitable, by causing the absorption of the skin, and blunting the pain, or else of determining the absorption if it be still possible.

When we are at liberty to do what we esteem right it would be wrong to wait the complete establishment of suppuration, before plunging the knife into the part, as is advised by some surgeons. The abscess, or abscesses, generally present neither partition nor sinuosities; once opened they collapse perfectly upon themselves, and union takes place so much the better that the parietes have not been absorbed or largely separated from the parts beneath. As for the surrounding tumefaction of the tissues, no fears need be entertained of its final resolution.

Thus, the cellulo-adipose, like the tuberos abscess, should be opened and largely so, upon the first certain appearance of fluctuation. I will add that the bistoury, plunged into the centre of these inflammations before their complete maturity, has appeared to me to arrest their developement, and even to favour their disappearance. When they are opened, the incision should be made towards the most declining part, and this even in several places, if the skin be very thin or the pus have had time to burrow. Supposing the cavity to be large, and the opening only half an inch in extent, it will be well to place a tent of soft linen, with cerate, to prevent the closure of the skin before the complete union of the deep-seated parts. This precaution will generally be useless, when the opening is large, the cavity small, or when we have been obliged to practise several incisions. But, in any case, we cannot dispense with the application of large emollient cataplasms, directly upon the part, and renewed morning and evening, until the suppuration have

completely ceased. Later in the treatment, when there remains but the external wound, the cataplasim should be replaced by a simple dressing, and recourse may with advantage be had to a well exercised compression to dissipate the remaining tumefaction and induration.

ART. 2.—*Deep-seated Abscesses.*

The submammar abscesses are either idiopathic or symptomatic: idiopathic when developed primarily under the gland; symptomatic when the consequence of diseases of organs more or less distant. I have seen one caused by the inflammation and suppuration of the perichondrium of a broken sterno-costal cartilage. In another patient the submammar abscess originated in an alteration of the subjacent ribs. In another, treated under my care at la Pitié, in 1834, an enormous abscess of this class, communicating with the bronchi, was the result of an apparently mild pneumonia. A woman at la Charité, in 1836, presented one, the consequence of a substernal caseous deposit. A young girl, under my observation at the same time, offered another example which had its commencement between the anterior border of the right lung and the costal pleura. Tubercles are another cause, not to be overlooked, and I have seen an infinity of these submammar deposits, dependent upon disease in the chest, and being thus only a variety of abscess by congestion.

Another species of this genus belongs to diseases of the mammary gland. Thus, the suppurations of the glandular tissue may spread and gain, and in fact often do gain the under surface of this organ. The subcutaneous abscesses themselves are susceptible of becoming deep-seated in following the fibro-cellular interlobular partitions. I have already remarked that the superficial abscess of the breast had a certain degree of tendency to penetrate inwardly.

The importance of these distinctions is easily conceivable by reflecting upon the differences resulting from the origin of the disease. No one, in fact, would consider as the same, either in prognosis or treatment, a submammar abscess, symptomatic of some disease of the chest, and one essentially idiopathic. It is clear, besides, that being obliged to traverse, and to alter more or less the tissue of the gland, to become deep-seated, the abscesses which appear in the submammar layer, after having existed in the subcutaneous or in the intervals of the glandular lobules, are attended with more serious consequences than the deep-seated abscess, properly idiopathic.

§ I.—*Symptoms.*

However it may be, the deep-seated are distinguished from the superficial abscesses, by differences ordinarily very well defined. Nearly always they are very large, occupying, as they do, the

whole base of the gland. When the inflammation advances to suppuration, the woman experiences irregular chills, partial sweats, and complains of the weight and distention of the mamma. This organ, not usually vividly red, is raised, tense, slightly irregular to the touch, sometimes smooth, hot, and presenting a very peculiar resistance. If we attempt to depress it, we feel it placed as if upon a bladder filled with liquid, and this sensation is experienced in pressing it in the other diameters as well as from before backwards. These collections, moreover, acquire a vast size, containing as much as two quarts of pus, as I have seen in several instances. In such cases the whole side of the chest appears transformed into an immense bag, pushing before it the integuments and the compressed gland. The posterior wall of this cavity being convex rather than level, and formed of elastic and flexible rather than of firm and resisting tissues, causes some difficulty in assuring ourselves of the fluctuation. In fact, compressed in one direction, the fluid bends before it the point opposite, or some one near, and thus does not rebound to give the sensation of fluctuation. Practitioners not much accustomed to this kind of examination, will do well to analyse particularly all the rational signs of the disease, and to take into consideration the duration and intensity of the previous inflammation. If after a week of the symptoms of submammary inflammation, the constitutional reaction diminish, and the redness and pain even lessen, without the fever entirely ceasing, without return of appetite, cleansing of the tongue, or diminution of the size of the breast, there is almost a certainty of the presence of abscess. No possible doubt can remain in the surgeon's mind, if there exist a slight degree of œdema, and if this œdema retain the pressure of the finger, with, at the same time, a slight reddish discoloration.

It is not to be thought, however, that the submammary inflammation always invades in this manner the whole breadth of the breast: it is possible that the adhesive inflammation may be established in certain parts of the lamellated cellular tissue, and instead of the diffused phlegmon the disease may assume the form of common inflammation; the submammary abscess may thus become very large or remain very small; there may even be several communicating with, or independent one of the other. We foresee in this latter case, that the gland will not be raised in totality, that the abscess will present a more or less considerable projection upon some part of the circumference of the organ, or remaining in the centre will cause the protrusion of only a part of the gland, and thus render its recognition a matter of some difficulty. I should say, however, that these varieties are admitted only as exceptions, and that in general the acute submammary abscess is observed with the characteristics first detailed.

§ II.—*Prognosis.*

The seat of these collections makes them of serious import, and not without some danger, unless the proper treatment be applied. Although the deep fascia, which is their seat, is very intimately united with the subcutaneous, where they meet at the circumference of the gland, the suppuration may break through this barrier in some cases, to spread itself like the diffused phlegmon, towards either the abdomen, the neck, or the axilla; or the consequences may be still worse: confined by this adhesion of the two fascias on the sides, and by the gland in front, the suppuration may destroy the bones or the cartilages, separate the muscular fibres, and break into the cavity of the pleura or the anterior mediastinum. Such a termination is doubtless rare, but it has been observed, and by myself in several instances. Most usually these abscesses advance forwards, following the interlobular divisions of the gland, and arrive under the integument, where they may possibly impose upon the observer as being originally subcutaneous.

It is evident, therefore, that the submammar abscesses demand all the attention of the practitioner. If it be true that some of them arrive externally at the circumference of the gland, most usually when left to themselves they find another route.

§ III.—*Treatment.*

These abscesses once formed, it would be loss of time, and incurring danger to the woman, to continue the simple employment of internal medicines and topical applications. Compresses, emollient poultices, embrocations, liniments, and ointments of all kinds, can answer no other end than that of satisfying the whims of the patient, or perhaps favouring slightly the absorption of the skin, in case we are not ready to employ, or the woman fears, the bistoury. In other words, I would say that the essential, or only efficient remedy of this genus of abscess, in its simple state, is the knife.

A. The opening of the deep-seated purulent collections of the breast requires, however, certain precautions; in fact, if there be not yet a manifest tendency of the pus forwards, the incision should be at the circumference of the gland, where the integument appears thinnest, or better in the most declining point of the cavity, inferiorly and externally in preference, or internally if the woman lie usually on the opposite side. This opening should be half an inch, or even an inch or more. It is better perpendicular than parallel to the ribs, as there is thus less danger of its closing too soon. Several similar incisions should be made, if the integuments have become thinned in several different points around the gland. Opened in this manner, these deep-seated abscesses give issue to an enormous quantity of matter, and generally are emptied entirely. Provided there be no sinuosity in the abscess, or constitutional disease in the patient, the cavity quickly closes, and the woman is

freed from its inconveniences in a week or two. I have seen instances of the complete union of the parietes of the abscess at the third or fourth day. We can, moreover, hasten this union, if it be tardy, by a well-applied bandage and compression.

In the contrary case, when the submammary abscess has traversed the gland in one or several points, and has appeared externally either around the nipple, or upon some other point of the surface, there is reason for some modification of our therapeutics. In such a case, in fact, the early opening of the abscess is not so important, nor should we attempt it upon the circumference of the breast—since even if by such an opening we should succeed in emptying the deep-seated cavity, we must expect to see the pus which has made its way forwards remain, to be evacuated by ulcerations of the skin, or a new incision. In this case, rarely will any thing suffice but a separate incision of each one of the little purulent tumours which appear under the integuments, after traversing the gland: the opening of one being rarely sufficient to empty the others. In this case, the abscess is formed by one grand primitive cavity, and a number of secondary ones, forming in front branches of the original one. Whether these collections be opened by art, or left to the resources of nature, we must expect to wait some time for their final closure. It is not of so great importance, whether they be opened by free incisions or small punctures. What is really necessary, is the complete division of the glands in the greater part of the extent of the abscess.

The abscess being diffused behind and before the gland, is divided, like a short stud, into two points by the mamma, so that the deep-seated pus, to arrive externally, is obliged to traverse a narrow strait in the gland. And, in fact, in some cases, after the opening of the abscess and the discharge of the pus, the elasticity of the gland closes immediately the communication, and prevents the issue of the pus afterwards secreted beneath, or else the openings continue fistulous indefinitely, and the cure is very long and difficult.

Hey, one of the first to notice this peculiarity, (*Pract. Obs. in Surg. &c.* edit. 1814,) advised the complete division of the gland in the whole extent of the abscess. This practice, although blamed by Sir A. Cooper, is in my opinion the most sure, and, in some cases, the only one capable of producing a radical cure, and would be of more general adoption, if it appeared less cruel in the eyes of surgeons and their patients. Having established its good effects, I have employed it upon a great number of patients, and must say that my observations fully confirm those of the surgeon of Leeds. It is not, however, either at the commencement, or at the acute stage, that this practice should be employed; but only when the openings have continued fistulous several weeks or months. To practise this, a director should be carried to the bottom of the cavity, to serve as guide to a straight bistoury in the incision of the gland: the finger introduced by this first opening serves as guide

to the incision of the sinuosities of the abscess, and is replaced by the director when these become simple fistulæ. The important point is, not to spare either the number or length of the incisions; the gland should be regarded merely as the integument of a vast abscess. In addition, it is necessary to keep separated the lips of all these incisions; that all the cavities should be filled with lint, that they may be cicatrised before the external openings. These incisions, at the most, are more frightful in appearance than reality. Generally they are followed by a speedy cure, and the cicatrices that are the consequence are really but slightly apparent.

If, then, the patient will consent to it, it is the practice which I would advise in preference in all cases where, after some weeks' duration, the suppuration resists the ordinary incisions. To detail what appears to me the best treatment, I will advise: at first, slight openings of each separate purulent collection; deep, numerous, and extensive incisions afterwards, if these first do not suffice.

Sir A. Cooper, in satisfying himself with directions to open, 1, when there is fever and want of sleep; 2, when there is distinct fluctuation; 3, that the openings should be numerous,—has not remarked that in opening them early and by large incisions at the circumference of the breast, we have a great chance of healing them like the subcutaneous acute abscess of the extremities.

Instead of these extensive incisions, the ordinary incision may be maintained open by means of a soft linen tent, or lint with cerate. Some surgeons, M. Jules Cloquet among others, have even proposed the continued presence of a large gum-elastic catheter. This practice really should not be neglected, when we are obliged to content ourselves with the limited incisions. But I have tried it often enough to say that it fails in the greater number of these cases, and the surgeons, who have so boasted of its success, have probably applied it indifferently to all the species of abscess of this part.

Whether tents, elastic catheters, be employed, or we rest satisfied with the simple incision, it is often useful to employ an accurate compression of the whole breast, taking care to leave open the orifices which give issue to the pus.

From these remarks, the reader will understand that the proper treatment of these deep-seated abscesses is their artificial opening towards the circumference of the breast, as long as the gland itself continues unimplicated, and that the incision should be practised at the most dependent part of the collection; whilst, as soon as the pus has traversed the gland, and formed a tumour or tumours in its surface, the incision should be made upon each point of fluctuation, without, however, any necessity of making them to so great an extent: that in this latter case, the lips of the wound should be kept from uniting by means of tents, or gum-elastic catheters; that, if at the end of a week or two the suppuration be not completed, the topical emollients should be replaced by compression; that, if this do not succeed, a trial must be made of irritating injections

of cinchona, red wine, or the weak solution of the tincture of iodine, or better still, a mixture of *three drops of sulphuric acid in an ounce of rose water*, so highly recommended by Sir A. Cooper. We may, also, in addition essay the resolute ointments or lotions, or finally a large transitory blister. But after the failure of all these, we must have recourse to the full and complete divisions which I have described above.

B. *Internal remedies*.—An affection so obstinate as this must of necessity be the cause of some modification of the economy of women attacked with it. Thus, it is especially against this form, that has been employed a host of internal medicines. I have felt obliged to experiment with those which appeared to offer the probability of benefit. In many instances, I have had recourse to simple purgatives repeated several times, at intervals of ten or twenty days: in others, I have used, in the same manner, emetics or emeto-cathartics. Instead of the common purgatives, I have sometimes used the tincture of colchicum in the dose of one or two drams a day, and I must say that the disease has not appeared to yield to this treatment, although so energetic. In some lymphatic females, in whom the tissues appeared soft and flabby, I have thought the tincture of iodine, or the iodine baths, indicated; but neither from this treatment have I obtained any recognisable effects. Calomel, as purgative, or in small or large dose, as alterative, has not been any more efficacious in my hands.

It remains to examine the treatment, so recommended in England, by Messrs. Kennedy and Beatty, (*Med. Chir. Rev.*, July, 1834,) and by Lever, (*Gaz. Med. of Paris*, 1837, p. 661,) a treatment, which consists in the tartar emetic in fractional or Rasorian doses. I have given this medicine, by spoonfuls, at the dose in twenty-four hours, of four, six, eight, and ten grains in six ounces of infusion of orange leaf and one ounce and a half of syrup of white poppies: and although I have continued this from three to eight days, the abscesses have not the less persisted. Moreover, an examination of the published facts of Messrs. Beatty and Lever prove absolutely nothing: firstly, the existence of an abscess, or of an inflammation even, is not clearly demonstrated in several of their cases: and, secondly, they employed in conjunction the volatile liniment externally with cathartics. I feel myself, therefore, authorised in concluding that none of the methods of internal treatment laid down against abscess of the breast in general possess any real efficacy against the submammary abscess in particular.

To conclude, with all due regard to attention to the constitution of the woman, and the causes which may give rise to the disease in each individual case, it must be allowed that the effects of nature, seconded by the lancet, compression, and medicated injections, in one word, the local remedies, are the only resources upon which we can safely rely in such a case.

ART. 3.—*Parenchymatous or glandular Abscess.*

The abscesses of the parenchyma of the gland are of several species; some originate in the very continuity of the lactiferous canals; and may be the consequence of a sort of milk congestion. If, according to Dugès, (*Dict. de Méd. et Chir. Prat.*) they sometimes occur at the critical period of female life, they are observed, and oftener even, in nurses, or those lately delivered. These abscesses commence by a true tumefaction from retained milk, and are only a complication of the distention of some of the milk ducts. The affected canal is transformed into a cyst, the parietes of which secrete pus, which, mingling with the milk, is the origin of a true abscess. The others, originating with the inflammation of the cellular tissue, or of the cellular parenchyma of the organ, are at first seated in the thickness of the divisions, or fibro-cellular bands, separating the different portions of the gland. These parenchymatous abscesses are *generally several in number*. They are nearly always developed under the influence of some irritation of the gland itself, an irritation which seems to proceed from the lactiferous canals towards the exterior. A number, almost infinite, may be developed in the same woman in the space of a few weeks: two, three, or even six of them appear at the same instant, or succeed each other after some days' interval. I have seen them successively supervene, as many as thirty-three in the same breast. They resemble closely, in this respect, all other glandular abscesses. Their number, in fact, must depend upon that of the lactiferous ducts, or glandular lobules, originally inflamed. For the same reason, they will appear simultaneously or consecutively, according as the inflammation originates at once or at different times in the ducts or lobules.

If the glandular abscesses are more numerous, they are, in compensation, much smaller than those of the cellulo-adipose tissue. In their size they have some analogy with the abscesses already described, situate around the nipple. In all cases, originating primarily in very dense and elastic tissues, badly supplied with vessels, they manifest a great tendency towards the purely cellular, or cellulo-adipose layers of the neighbourhood. We are not surprised, therefore, to find them soon transformed, in a great number of cases, into subcutaneous, or even submammary abscesses.

§ I.—*Causes.*

This kind of abscess is, without doubt, the most frequent of all: in this manner commences nearly constantly those abscesses of the breast, appearing without external violence in *pregnant, puerperal, or nursing* women. Originating in the irritation of the gland itself, they are very naturally connected with the functions of nursing, and the secretion of milk in general. We may, in this connection, inquire whether these abscesses are more frequent in

women who do not nurse than in those who fulfil their duty of mother in its full extent. There is a doctrine prevalent upon this subject, which appears to me essentially erroneous. Moralists, many physiologists, and a host of obstetricians, have handed down the opinion that, in not nursing, the female exposes herself to inflammations, abscesses, and all sorts of diseases of the *mammæ*: whilst, that those who consent to fulfil their function are, by so doing, freed from all danger of any of these inconveniences. I know nothing more false than these assertions. Observation demonstrates most clearly, that women who nurse are incomparably more often affected with abscess of the *mammæ* than when they do not execute this function. The puerperal woman, who does not nurse her child, is free from the secretion of the milk in one or two weeks; and the *mammæ* return to their state of repose, and lose all tendency to inflammation. The nurse, on the contrary, is, without cessation, exposed to inflammation and abscess of the breast during a period of ten or fifteen months. Besides, it is not during the first eight or ten days of confinement that we generally encounter the mammary abscess, and beyond this period we should hardly expect the disease in a mother who did not nurse. It is, from other reasons, so clear that authors have deceived themselves upon this point, that it is hardly necessary to discuss it. I will merely add, that nurses may be affected with this kind of abscess at all the periods of lactation, but that it is more common in the first four months than later.

The glandular abscess is much less rapid in progress, and much longer in duration than those of the first or second species. The process of suppuration takes place slower in the parenchyma, the excretory ducts, and the fibro-cellular bands, than in the deep-seated or subcutaneous cellular tissue. It need not surprise us, therefore, to see these collections require ten, fifteen, or twenty days for their developement.

§ II.—*Symptoms.*

The glandular abscess presents itself with symptoms not always easily diagnosticated from those of the first two species. Nevertheless, if the *mammæ* have been simply tumefied, either in part or in totality; if, after deep, scattered, and lancinating pains, often of twelve days' continuance, we observe at various points the appearance of small nodosities; and if some of these appear to become soft and fluctuating, assuming at the same time a bluish tint, we are authorised in believing in the existence of an abscess in the tissue of the gland. They appear, in preference, under or around the areola. If, after being deep-seated, they become superficial, we recognise in them two stages, one slow, just described, the other more active, in which they follow the progress of the subcutaneous or submammary, so that we have the symptoms of the glandular

abscess in the commencing, and of the superficial or deep-seated in the secondary stage of the affection.

§ III.—*Treatment.*

The *treatment* of this class of abscess is very embarrassing; to direct it properly, I regard a correct diagnosis as highly important. It appears to me very clear, that the neglect of the proper distinctions between this genus and the superficial or deep-seated, is the origin of the disagreement among surgeons upon the treatment the most applicable.

A. Thus, the *early opening* so useful in the subcutaneous or even the deep-seated would evidently be pernicious here. All that authors have said in favor of delaying the issue of the pus, in reality applies only to this species, for it is the only case where there would appear any semblance of propriety in leaving the opening entirely to nature, or else merely assisting her by a slight puncture. This practice, which would be the most commendable if there were no tendency in these abscesses to become superficial or deep-seated, exposes us too much to this inconvenience to allow me to recommend it. In reality, therefore, it is proper to open these abscesses only when the fluctuation is very evident, and this opening should be reduced to a simple puncture upon each purulent collection, if they be small in quantity. In the contrary case, if the cavity be at all extensive or deep-seated, it should be freely incised, and the lips of the wound kept separate by a tent or gum-elastic bougie. We should expect also to be obliged to open successively and at some days interval, a certain number of these same abscesses. After the incision we dress the part with topical emollients, and soon after with the discutient ointments, or compression.

B. In such a case the question of *nursing* presents itself in all its force. In the case of the deep-seated or superficial cellular abscess, the suction of the child can have no other inconvenience than the slight increase of the irritation or inflammation. The secretion of the milk not being necessarily affected, there could result from it no danger to the child. In the case however of glandular abscess the question is quite different: the inflammatory process, going on in the glandular tissue, causes immediately some disturbance in its function of secretion. If the lactiferous canals be themselves inflamed, their surfaces will pour, into the nutritive fluid, purulent globules which must of necessity be swallowed by the infant. In fact, these abscesses once established in the secreting lobules transfuse, almost inevitably, by imbibition, endosmose, or some other means, a part of their pus into the excretory ducts. It may consequently be fully admitted that the child, who nurses a woman affected with a glandular abscess of the breast, swallows a greater or less quantity of pus with the milk supposed to nourish him. This fact, resulting from simple reflection upon the subject, is put beyond doubt by the microscopical observations of M.

Donné. I have, in fact, in company with this distinguished observer, assured myself that the milk of all nurses affected with this particular abscess, contains a quantity, sometimes considerable, of pus. The distinction otherwise is so easy, that all practitioners may make the experiment. In placing a drop of this milk under the microscope, we soon see that the transparent fluid which forms the menstruum, as it were, contains regular circular globules; those of the milk, and others with a fringe-like border, which are the globules of pus, besides that ammonia destroys these latter without affecting the former. But this is not the place to insist upon these characters, and I confine myself to the simple mention of the fact. This mixture of pus and milk is found, moreover, in the purulent cavities themselves, and in the liquid which they discharge either spontaneously or after an incision.

In these kinds of abscess, *the child should not be put to the breast*, not that it may aggravate the disease, but on account of the danger that may be incurred by itself. Another peculiarity of this species is, that the secretion of milk encourages also the secretion of pus, as also this latter fluid keeps up and even increases the secretion of the former. There are in fact two secretions, one physiological, the other pathological, each of which strengthens and prolongs the other. In this manner the tenacity, and the difficulty experienced in the cure of certain abscesses of the mamma are explained.

C. These considerations incline us to the belief that the glandular abscess is not so much under the influence of *topical applications*, or the *local treatment* in general, as the two other species, and that it will be found more often useful to attack it with constitutional remedies. If they resist at all the treatment, we can hardly expect to free the patients of them, without cutting short the secretion of the milk, an effect only to be attained by internal remedies. In such cases we may rely upon the internal use of iodine, calomel in alterative doses, and the tartar emetic after the Rasorian formula; and the use of compression should not be omitted. Under this treatment the functions of the gland are suspended; the secretion of milk is diminished little by little, and the abscesses finish by closure and cicatrization. Unfortunately it is impossible to act in this manner upon one of the glands separately; and as the greater part of women will not consent to deprive their infants of one nipple, unless they are able to give them the other, this constitutes a treatment both difficult and delicate. It must be added, then, that if the women must continue to nurse, these abscesses should be treated entirely locally, without, however, any expectation of their immediate disappearance; we must not in such a case be surprised at their continuance for two or three months after their incision.

ART. 4.—*Chronic Abscess.*

All the kinds of abscess hitherto noticed have deserved the appellation of acute, and are, in fact, only phlegmonous abscesses modified by the anatomical disposition of the part: but there are abscesses of the breast which follow the progress of the cold abscess or abscess by congestion; and which merit in consequence the title of chronic. Sir A. Cooper, who speaks of these deposits, contents himself with directing their opening, after a treatment by the ammoniaco-mercurial plaster, or a solution of ammonia in alcohol, and that recourse should be then had to tonics, and stimulating injections, and he remarks that the accompanying tumefaction of the axillary glands will be dissipated simultaneously, and need cause no modification of the treatment of common abscess. I have seen many varieties of this order of abscess.

§ I.—*Tuberculous Abscess.*

A woman from Provence had one of these, the size of the fist, which had gradually developed after a blow from an elbow. This collection which dated eighteen months, and which had never been accompanied by decided pain or symptoms of inflammation, occupied the interior and superior part of the breast. Of the tumours, existent upon the surface, some were soft and fluctuating, while others were so dense as to encourage the opinion of a fibrous tumour, an encephaloid mass, or scirrhus. The opening, which I thought proper to practise, gave issue to a quantity of sero-grumous pus, having all the characters of the serophulous or tuberculous. The parietes of the cyst, formed partly by the tissue of the gland, had undergone no organic transformation. An attentive examination of the cavity showed me that it extended, by a slightly sinuous communication, into the anterior mediastinum; no alteration of the bones, cartilages, or lung could be discovered, and as the abscess was finally healed, I have thought I might conclude that it was not dependent upon any deep-seated organic lesion.

The tuberculous abscess appears to me to be quite rare, and I do not think that any lymphatic glandular abscesses have ever been observed. Thus far, anatomy does not admit the existence of the smallest lymphatic gland in the mamma, and nothing in the functions of this part would require the existence of such organs to explain the different phases of female life. It is probable, therefore, that those who have believed in the presence of a great number of lymphatic glands in this part, have been imposed upon by some lobules of the secreting organ.

§ II.—*Submammar Chronic Abscess.*

When the pus accumulates under the gland, it happens sometimes that the inflammation subsides, the pain ceases, and the woman feels herself much better. If the quantity of pus be not considerable, affairs may remain in this state several weeks or even months. I have seen women with these abscesses, lasting for three or six weeks, or even two months, and believing themselves only suffering under a simple tumefaction from retention of milk. I can cite among other cases a nurse aged about thirty years, who entered at la Charité, but not till after six weeks of the disease. She had the right breast of twice the size of the left, she suffered little and otherwise enjoyed good health, nevertheless an incision practised in the submammar fold of the skin gave issue to more than two glasses of pus, of a sufficiently good appearance.

Another woman aged twenty-six, of a strong though slightly lymphatic constitution, had been attacked with some symptoms of inflammation of the left breast in the second month of pregnancy. As the pain and constitutional symptoms had been very slight, and the patient had been obliged to travel ever since, she had hardly thought of it. When she entered at la Charité, the left breast was tripled in size, and she was in the ninth month of gestation. The absence of redness, of œdema and of all pain, did not prevent my belief in the existence of a deep-seated and chronic suppuration, which was moreover very clear from an evident fluctuation. This abscess, which I was obliged to incise largely, contained nearly a quart of pus, and was situate between the gland and the chest.

I saw, in 1825, at the hospital of the Faculty, a woman with an enormous tumefaction of the left breast, which had been mistaken for a cancerous tumour, and really did offer the greater part of the characteristics of that degeneration of the mamma, and was operated upon as such; in this case the whole breast was transformed into a large cyst entirely filled with half liquid, half concrete pus. In all cases where I have met with these deposits, the women appeared in perfect health, of robust constitutions, and were neither decidedly scrofulous nor tuberculous. In all, the disease has been purely a local affection, and been completely cured under purely surgical treatment.

The prognosis, consequently, is grave only when the purulent collection is an abscess by congestion, symptomatic of some disease of the bones. The best treatment is that of acute abscess in general: only, as we have in these cases a cavity surrounded with *mucous* parietes, it is better to incise them as a symptomatic abscess: that is, if the collection be large, to discharge it by successive punctures; whilst if it is of moderate size, the free incisions, capable of preventing all retention of the pus, appear to me preferable. We shall still be obliged to recur to the free incisions, if the abscess pass to the acute stage, or if it delay its contraction after being reduced to a moderate size. The dissection and extirpation

of the *entire* tumour in such a case is perfectly useless. In adopting it we should substitute a laborious, delicate, long and painful operation to that of the simple opening of an abscess, and rather diminish than augment the probabilities of cure. It is, however, important, when we adopt the pure and simple incisions, to fill the cavity each day from the bottom with lint, to cover the whole with emollient cataplasms, and even to employ stimulating injections, and above all to carefully prevent all retention of pus.

§ III.—*Contusions and sanguineous collections of the Breast.*

Two species of contusions have been observed in the female breast. The first described by Sir A. Cooper as independent of all external violence, under the name of *ecchymosis*, appears with a brown or yellowish spot, at times very large. These ecchymoses, generally appearing at the menstrual periods or critical epoch, are sometimes accompanied with rather severe pain. There is commonly no accompanying tumefaction. They depend upon a slight infiltration of blood in the subcutaneous or glandular tissue, and are analogous to the simple spots appearing in the ocular conjunctiva or cellular tissue of the eyelid. They have not appeared attended with any danger; and as they disappear spontaneously in the space of two weeks or a month, I should not counsel any active treatment. A general bleeding, some leeches around the mamma, with resolute compresses and some derivations upon the intestinal canal, are the series of means which the surgeon can employ if he think any thing necessary.

Contusions, properly so called, may be the origin of an infinity of different lesions. Acting only upon the skin and the subcutaneous cellular layer, they will cause the rupture more or less of some adipose cells, and the formation of sanguineous tumours as elsewhere, and will offer no particular indication either in the prognosis or treatment. Extending deeply, they may break down, and affect in numerous ways the glandular lobes, rupture the blood-vessels, and become the origin of a simple infiltration of blood, of true sanguineous deposits or of different degenerations in the thickness of the gland. We shall see, hereafter, that certain *tumours* appear intimately connected with this species of lesion. We can, however, prevent the consequences only by proper antiphlogistic treatment, and topical resolute applications. Venesection, leeches, emollient poultices should then be prescribed, if the pain and inflammatory symptoms tend to gain the ascendancy. After these means, or from the commencement if proper, we may have recourse to lead water, a solution of sal ammoniac, the iodine ointments, compression, or even a large transitory blister. In case of its resulting in supuration it is treated like abscess in general.

When the contusion extends its influence deeper, an ecchymosis is the result, which has this peculiarity, that it is not manifested till the end of several days, and then rather at the circumference

than at the surface of the breast. In these cases, instead of a simple effusion, there is a true collection of blood, recognised by all the characters of the submammary abscess; except that we observe a livid bluish, or yellowish tint, rather than the red colour of abscess. It must be added, also, that the raising up of the gland is seldom so great as in the abscess, and that the disease causes almost no pain, even when the part is considerably compressed. This kind of deposit may, as in other parts of the body, become inflamed and transformed into a sanguineous abscess. I saw such a case in the course of the year 1837, in a woman of about fifty years of age. For a long time indolent and stationary, the tumour had become painful for about a month before entrance at the hospital. The fluctuation, although obscure, was appreciable at the bottom of the tumour. I plunged a straight bistoury into the tumour, and gave issue to about a glass of blood, partly coagulated and partly liquid, mingled with a considerable proportion of pus. This cavity was then treated like an inflamed sanguineous deposit, but it was not healed under six weeks. In another woman the bloody tumour, which had appeared in the same manner, ended in a decrease of volume and induration. As there was neither pain nor other sign of inflammation, I attacked it with compression, and conquered it in the space of five weeks.

§ IV.—*Fistulæ of the Breast.*

Latterly some practitioners have drawn attention more particularly to fistulæ of the breast; but I fear they have confounded under this name the openings of certain abscesses with the true fistulæ. There is here a distinction to be made.

ART. 1.—*Purulent Fistulæ.*

In my opinion the name of fistulæ does not properly belong to the sinuous passages or orifices, whatever they may be, resulting from the opening of the gland, and which are kept up by the persistence of a suppurating cavity. These in fact merely complicate the disease, but do not constitute one in themselves. To attack, in such a case, the pretended fistulæ, would be to regard only the shadow of the disease, and to expose ourselves to increase rather than to destroy the accidents already present. It is the treatment, in these cases, of the abscess, and not of the fistula which we should have in view.

ART. 2.—*Lactiferous Fistulæ.*

What I have said above, is not meant as a denial of the existence of fistula of the breast. I am well aware, both from the observations of many authors and of myself, that this disease is really sometimes met with in practice.

It consists in little canals longer or shorter, but in general rather short, opening at one end at the skin, and at the other into some lactiferous duct. The cutaneous orifice of these fistulæ, sometimes very narrow, at other times larger, furnishes an exudation in some cases very copious; the liquid which escapes in this manner is lactescent or sero-purulent. The seat of these fistulæ is more particularly around the nipple or in the areola. The tumefaction from retention of milk in its proper canal is their most general cause; they may supervene, however, after wounds, or those free incisions, which abscess of this part sometimes renders necessary. It is easily conceivable that if any one of these canals becomes obstructed or obliterated, the milk confined behind the obstacle will distend the duct, transform it into a cyst, and that the opening of this can easily remain fistulous; or that if during lactation one of the principal lactiferous tubes be divided, the wound will be kept open by the continual passage of the milk, and be transformed into a fistula. The mechanism will be the same in the case of abscess of the opening, spontaneous or otherwise, if the cavity communicate with one or more of the lacteal ducts.

The fistulæ of the breast may be as different in their situation, form, and resistance to curative means as those of the salivary glands; so that, at first view, the parotid and mamma would appear analogous as far as regards these fistulæ. But we must not be imposed upon by superficial appearances; the secretion of the parotid is constant from the life until the death of the individual, whereas that of the mamma is only transitory or intermittent, the saliva is extremely thin and penetrating, while the milk is generally rather consistent and not very decidedly liquid. In fine, some of the salivary ducts are long, voluminous, and entirely isolated from the glandular lobules, whilst the mammary ducts, surrounded in nearly their whole extent by the gland, are either tortuous and irregular, or smaller at the nipple than at the commencement. These anatomico-physiological differences cause that wounds of the mamma are incomparably less often followed by fistulous openings than those of the parotid. When they exist, however, they may persist a long time, especially in the case of a nurse or pregnant woman. In other cases, the absence or cessation of lactation would soon allow them to close if they were not kept open by the passage of the milk. I have already stated what should be our practice if they are prolonged into a purulent cavity.

The *treatment* of these lacteal fistulæ must vary according as the woman wishes to continue or cease the function of nurse. In the first case we may commence by cauterisation with the nitrate of silver, with the additional use of some astringent powder, as alum or sulphate of iron and styptic solutions. After four or five repetitions at intervals of some days, the applications of the caustic produce nearly always a cure. If this fail, recourse must be had to the irritating injections, repeated morning and evening for several days until a manifest inflammation be established in the track of

the fistula. These injections may be made by means of a urethral syringe and a weak solution of nitrate of silver, the sulphate of zinc, copper or alum, the tincture of iodine or strong red wine. If the disease still resist these measures it may be useful to dilate the orifice in order to cauterise the bottom of the fistula with the pencil of nitrate of silver. I have never met a case that resisted all these three means of treatment.

Supposing that our patient, however, wishes to cease her quality of nurse, these same remedies will be still more likely to succeed; and it will be allowable to add a well-applied compression, and a regimen and internal treatment proper to lessen the secretion.

To conclude, I do not think the fistulæ of the breast merit all the attention and care which some surgeons have, for a number of years, pretended.

§ V.—*Tumours of the Mamma.*

The breast is subject to a great variety of affections, hitherto described by common accord, under the general name of *tumours*. Instead of the two groups of Sir Astley Cooper, the non-malignant and the malignant, I shall class them under three heads; the first comprising the simple hypertrophies of the gland or its envelopes; the second, the degenerations of the natural tissues; and the third, the anormal productions. I shall examine successively these three classes, as arranged in the following table.

1. Hypertrophies.	{	<i>a.</i> Of the gland.	
		<i>b.</i> Of the cellular tissue.	
		<i>c.</i> Of the adipose tissue.	
2. Degenerations.	{	A. Ligneous.	{ In thin patches. In masses. Radiated.
		B. Fibro-scirrhous.	{ In branches. Glandular. Of the lacteal canals.
		A. Liquid cysts.	{ Serous, or hydatid. Gelatinous. Sanguinolent.
	{		{ Fibrinous. Tuberculous. Butter-like, or milky.
		B. Solid.	{ Osseous. Scirrhus. Cerebriform.
			{ Colloid. Melanic.

ART. I.—*Hypertrophies.*

This is an affection which has been more frequently observed in India, America, and England than in France. Sir A. Cooper, who cites some cases, thinks celibacy to be the principal cause, and that they are more frequent between the ages of thirty and thirty-five. This author speaks "of a young girl, aged fifteen, whose *mammæ*, pyriform and pediculated, extended quite to the abdomen," and measured twenty-three and a half inches in circumference. There is also another example in the same work, of a *mamma* which extended quite to the knees of the woman, and weighed thirty pounds. Messrs. Chassaignac and Richelot, who have translated into French the works of this author, have appended eleven observations of the same affection.

Dr. Huston, (*Jour. des Conn. Méd. Chirur.* t. ii. p. 89,) cites the case of a negress, who after the first appearance of the catamenia, at the age of fourteen, had never had a recurrence of them. In two years the *mammæ* of this woman acquired an enormous developement; although the general health remained excellent. An accidental blow upon one of the breasts was followed by ulceration, gangrene, and death. The left *mamma*, weighing twenty pounds, was forty-two inches in circumference. The other was only thirty-four inches in circumference, and weighed twelve pounds. This tumour, entirely composed of a hypertrophy of the glandular tissue, contained no kind of degeneration or abnormal tissue.

The observations hitherto published, and those of Dr. Fingerhuth, (*Gaz. Méd. de Paris*, 1837, p. 154,) would seem to prove that hypertrophy of the breast is more common at the age of puberty than at the other epochs of life, and that in unmarried women only it is observed rather frequently between the ages of thirty and forty. Its first appearance does not attract much attention: not being accompanied either with pain or trouble of the principal functions of the economy, it causes no inquietude, and the woman supposes it a natural developement of the part.

The catamenia, however, begin to decrease in abundance, in regularity, and often are entirely suppressed: the voice also undergoes some change, becoming hoarse at times, and several of the women have complained of a sensation of hoarseness during the increase of the disease.

In a tolerably large number of cases the gland is developed without losing its firmness, in some cases being even a little increased in density: the tumour also may preserve the globular or splenoidal form of the part at puberty: in some of the cases it acquired an enormous volume without being dragged upon the abdomen by its weight. In the greater number of cases, however, it descends gradually even to the thighs, assumes a pear-shape, and finally appears only attached to the chest by a thin pedicle.

This affection demands a careful attention in the commencement: for, besides the consequent deformity, when the resolution is not obtained, it finishes by undergoing some ill-conditioned transformation, and even by producing a general emaciation, with an alteration of the nutritive functions, and the death of the patient in a few years. The remedies to be applied are the same as those for hypertrophy in general, and that of the thyroid gland in particular. Calomel in fractional doses, antimony to produce nausea, repeated purgatives, the different emmenagogues, and topical astringents or resolutive, which have been employed by M. Fingerhuth in Germany, Huston in America, Sir A. Cooper in England, and some surgeons in India, do not appear thus far to have produced any satisfactory result. As these divers remedies are not unattended with danger to the rest of the economy, I think it would be better to renounce altogether their employment. The therapeutics in these cases must be derived from other sources. Pregnancy, if I am not deceived, would be the first remedy to advise, supposing the patient to be in a situation to employ it.

The state of the *mammæ* is so intimately connected with that of the womb, that sexual connection and gestation could hardly fail to be advantageous against the hypertrophy of the breast.

Iodine, in all its forms, given so as insensibly to transfuse all the organs, would here be the most powerful remedy. The patient should be accustomed to it by commencing with from fifteen to thirty drops a day. Baths of the same nature, followed by ointments of the hydriodate of lead, of potassa, or mercury, in inunction upon the breast, should be associated with the internal treatment. A vegetable rather than animal diet should be employed, with slightly bitter or alterative drinks, and at the same time a well-adapted suspensory should elevate the part, and prevent as much as possible the stagnation of the fluids.

A methodical compression, whether as primary or secondary treatment, would offer an additional chance of success, and merit an essay as a local means.

The hypertrophy is, after all, a disease very little known in France; I have only seen it twice in a degree capable of being considered as such. One of the women was aged eighteen years, and had the gland as large as the head of an adult, although she appeared otherwise in perfect health, and the other gland was only half the size. In the second, aged about forty, the mother of several children, and a widow for twelve years, the two mammary glands had acquired at least the triple of their natural size in the space of twenty months, although the general corpulence had not augmented, and the tumours offered no kind of degeneration. These women, not suffering at all, were unwilling to adopt any treatment, and I have completely lost sight of them.

§ II.—*Hypertrophy from accumulation of adipose Matter.*

By the name of *adipose* tumour, I understand a tumour which appears very rare, and of which we have very few examples. No doubt a *lipoma* may be developed in the breast as elsewhere: I have observed two examples myself, but these are circumscribed, lobular, usually pendulous, sometimes pediculated tumours; whilst by the *adipose hypertrophy* of the mammæ I understand a tumour comprehending nearly the whole region of the breast, and which may acquire a considerable volume, without becoming pediculated, but still preserving its large base. It would appear, in these cases, that by their extreme developement, the adipose cells of the interlobular partitions and of the subcutaneous layer, have so encroached upon the fibro-cellular tissue as to cause its atrophy, as well as the gland itself, to a greater or less degree.

The tumour, in this case, has some analogy with the fatty degeneration of certain muscles. But it differs from this latter in this, that the adipose tissue acquires an immense increase of development, whilst the natural tissues are not, in all cases, destroyed by it.

The hypertrophied mass upon incision presents a homogeneous texture, traversed by some whitish fibrous bands intermingled with a certain number of deformed glandular bodies, unctuous to the touch, of a grayish colour, about the consistence of lard, and breaking down in part under the pressure of the finger. This mass is nearly always lobulated, as if subdivided into a variable number of secondary masses, by the fibro-cellular partitions and natural lobules of the breast.

Sir A. Cooper reports the observation of an adipose tumour of the breast thirty-two inches in circumference, ten and a half in its transverse diameter, and weighing fourteen pounds ten ounces. Dr. Warren speaks of a woman, aged twenty-eight, from whom was extirpated an adipose tumour weighing eight pounds, (On Tumours, &c. p. 229.) I saw, in the course of 1838, a mass of seventeen pounds, (French,) which had been taken from a woman's breast by M. Jules Cloquet, which seemed to me to be adipose in its nature. In fact, many of its lobules still preserved the indubitable characters of lipomatous tumours. It is true that this tumour was degenerated in a great part of its extent, so as to unite the appearances of encephaloid disease, and of softened fibro-scirrhous masses: but as I have acquired the certainty that lipomatous tumours undergo, after a long existence, a species of putrefaction, which simulates the cerebriform alteration, I am inclined to think that this individual tumour, which has generally been regarded as carcinomatous, was really of a fatty or fibro-adipose nature. The fatty hypertrophy of the breast may be compared to certain tumours which develop themselves between the muscles, or in the middle of the extremities. I have observed these tumours in the thick-

ness of the thigh, or of the sciatic nerve, in the middle of the nates, or popliteal space, under the *facia lata*, in the inguinal region, between the muscles of the abdomen, and in other places. On the abdomen, or around the sciatic nerve, they were ovoid or pyriform, tolerably regular, firm and elastic like fibrous tumours: the incised surface was yellowish and unctuous, interspersed with a grayish tint, and with certain bands which might cause some anatomists to doubt whether they should be considered as fibrous tumours or adipose hypertrophies.

These tumours appear without appreciable cause: they do not seem peculiar to any age, except that they occur between the commencement and termination of the menstrual function. Neither the patient of Sir Astley Cooper, of Dr. Warren, nor of M. Cloquet, could assign any cause for their affections. Corpulent women do not appear more exposed to this disease than others: it is even remarkable that the rest of the body emaciates with the increase of the tumour. On the whole, it is a pathological process which seems to call into the adipose cells of the breast an infinity of materials, destined by the organism for distribution elsewhere.

The hypertrophy of the breast arises insensibly, without pain, or difficulty, and produces no change in the form, density, or colour of the part before it has acquired a developement. After some time the disease begins to be troublesome by the weight and consequent deformity: it is accompanied by no pain, heat, or other alarming symptom, unless there supervene some decomposition or transformation of the tissue: in this latter case, one or more of the lobules of the tumour seem to tumify and soften. The skin covering them becomes thinner, red, and finally ulcerates, giving issue to a sero-purulent matter, mingled with a sanguinolent detritus, and is finally changed into an excavated ulcer, shooting forth fungosities, which might easily be mistaken for cerebriform. Each of the other lobules taking on the same decomposition, the result may be the final mortification and destruction of the whole tumour; but we have no case of the disease pursuing this course until the end, without undergoing some ill-conditioned transformation, or causing the death of the patient before the putrefaction of its last lobules.

The fatty tumours not being of a nature to disappear spontaneously, or to yield to topical or internal remedies, require their destruction by the surgeon as soon as possible. Thus, although not appertaining to the class of malignant tumours, they reclaim equally with them surgical ablation. I shall not stop to say that, in these cases, the knife is the means to be preferred: caustics, of whatever kind, act neither with the same promptitude, nor with the same neatness and security as the bistoury. It is important to a radical cure, however, to remove carefully all the fatty mass, since, by leaving never so small a piece, we incur the danger of the reproduction of the disease. As these are natural tissues, developed under the influence of some unknown agent, we comprehend why their limits are usually not very clearly defined, and

that it is better to remove some of the healthy tissue, rather than leave any thing to be the seed of future evil. The operation is performed in the manner that will be hereafter indicated when I shall speak of the extirpation of tumours. Although this species of tumours would not appear to inspire any fear of return after removal, still they have not been observed sufficiently often to enable us to declare them perfectly exempt from this accident.

I will merely add that, in Dr. Warren's case, the disease returned on the opposite side, some months after the operation.

§ III.—*Fibro-cellular Hypertrophy.*

Under this name I shall describe the tumours formed by an anormal developement of the different bands and cellular layers which separate or envelope the lobes of the glandular tissue, providing always that these parts have not undergone any manifest morbid transformation, or enclose any anormal production, or any tumour foreign to the elements of the organisation. Every practitioner has had occasion to observe the breast remaining hard, lobulated, and resistant, with evident increase of volume, after an inflammation, or an acute or chronic abscess of the part. It is a condition which most pathologists have hitherto confounded with scirrhus, or commencing encephaloid disease. I am strongly inclined to believe that the affection described by Sir A. Cooper and Dr. Warren, (Op. cit. p. 221,) under the name of *chronic mammary tumour*, is in part the disease of which I am at present speaking. We shall see, however, a little further on, that the name of *chronic mammary tumour* has been likewise given by the English authors to tumours of an entirely different nature.

A breast, which has remained voluminous and diseased after an abscess or inflammation, appears on examination harder, less elastic, and lobulated, and of a more homogeneous tissue than in the natural state. It appears as if the subcutaneous cellulo-adipose tissue, and the interglandular partitions or bands were confounded together into a more or less regular mass, in the midst of which the glandular element appears as if lost.

Perhaps the grave question agitated so many times, and always remaining undecided, whether scirrhus of the mamma be or be not the result of inflammation, is only so obscure from pathologists not having distinguished the fibro-cellular hypertrophy of this part from degenerations really scirrhus. However this may be, the hypertrophy at present under consideration is nearly always the result of a prolonged inflammatory process, and these tumours almost never, if ever, undergo the carcinomatous transformation. These are recognisable, primarily, by the antecedents furnished by the patients; secondly, by the absence of heat, pain, and redness; by the density and mobility of the mass, although the integuments appear sometimes as if adherent to its surface; by the good constitution, and the general satisfactory appearance of the patient, as

well as by the benignity of the disease, and its tendency to remain stationary for a length of time almost indefinite.

The cellulo-fibrous hypertrophy of the breast often ends by disappearing spontaneously: being a species of induration of the tissues, it may—as elsewhere—be dissipated by a gradual and complete resolution, even after it has persisted for some length of time. As it has no tendency to degeneration, as the pathological changes which may attack it are confined to new inflammations or abscess, there is never any immediate necessity of recurrence to surgical means.

If there still remain a little heat in the breast, some tendency to inflammation, leeches are indicated; to be applied either scattered over the tumour, or in a circle around its base: ten or twenty every week or two should be thus applied. A venesection and topical emollients might still be employed in aid of this local bleeding. If the breast were entirely indolent, the disease of long standing, or the woman incapable of supporting without inconvenience the loss of blood, or if recourse have already been had to these means unsuccessfully, it would be advisable to employ resolute frictions, either with the ointment of the iodide of lead, the hydriodate of potassa, or even the mercurial: compression, baths, purgatives, and alterative ptisans would complete this method of treatment. A well-established compression possesses here an indubitable efficacy, and I am convinced that the successes obtained by Young and M. Recamier were in cases of this tumour complicating mammary congestion. But these active remedies may be dispensed with when the tumour diminishes rather than increases, or when it is not very large, or is reduced to a state of induration, representing in some of its characters the cellular induration in the neighbourhood of a cicatrix.

ART. 2.—*Degenerations.*

A more important class of tumours than those just considered, includes tumours from degeneration of the breast. I shall divide them into the ligneous and fibro-scirrhous degenerations.

§ I.—*Ligneous Transformation.*

It is not unfrequent to observe some one of the elementary tissues of the breast assume the hardness of wood, or of a fibro-cartilaginous tissue; appearing under two particular forms—of plates and of masses.

By the name of ligneous plates, I understand a variety of cancer, which, although very common, has only been vaguely noticed by surgeons. Its seat is in the skin by predilection; but at its commencement, as well as in its greatest developement, it may attack all the tissues of this region. The disease sometimes is in a disc, more or less extensive, and more or less circumscribed of the tegumentary envelope: sometimes in isolated points, often quite

distant the one from the other. In the first case the skin is hard to the touch, a little rugous like the bark of a tree, thickened, and of a grayish or reddish hue, entirely anormal; appearing as if tanned, or as if a piece of firm leather had taken the place of the natural skin. In the second case, we find the same appearances, with the peculiarity that the patches are smaller and more disseminated; very often, however, these two species are combined in the same patient. I have seen patients with the breast entirely covered, and with the disease extending quite into the axilla on one side, and towards the clavicle and sternum on the other. I have also seen, besides the principal one, the whole front of the chest covered with an infinity of small patches. In some places the patches appear to make a slight relief upon the surface of the skin, whilst in others they appear to extend rather towards the subcutaneous tissue. Quite often they have a coppery hue, which might excite the suspicion of some syphilitic affection, if the touch did not indicate their ligneous consistence, and all the other characteristics pointed out above.

An incision of these patches shows them exclusively situated in the skin, and that it has acquired the thickness of that of the larger animals, or of the hide of the hog. It is a transformation or degeneration quite peculiar in its nature, and which appeared to me the more worthy of a separate notice, that it is reproduced with an extreme obstinacy, and that it is almost useless to treat it with surgical means.

In other cases, the ligneous degeneration manifests itself under the form of *masses* or tumours, generally small in size; appearing like small grains or balls in or under the skin, sometimes continuous with it, and being situated in the cellulo-adipose layer. These tumors, which resemble in a certain degree, both in size and volume, those called ganglions, naturally give the idea of a pea, a filbert, or a horse-chestnut, fastened to the internal face of the integuments, and developed in the thickness of the superficial subcutaneous fascia. They have always appeared to me the result of the transformation of the cutaneous or cellulo-fibrous tissues. An incision shows them to be generally homogeneous, and of a grayish blue tint: their centre contains sometimes a yellowish, friable and even caseous matter: throughout the whole, they have a consistence which makes them difficult to distinguish from the fibrous tumours, of which they form, I think, one of the varieties. It is not rare to find a great number of these tumours in the same person, and situated at some distance one from the other.

As they cause neither pain nor inflammation, as they are, so to speak, scattered over the internal surface of the skin like foreign bodies, the patient remains some time without discovering them; being reproduced with great activity, they appear the result of a general modification of the organism, rather than of a simple local alteration.

I have separated these two shades of the ligneous transformation

of the breast, from the scirrhus, properly so called, because they have seemed to me to offer a distinct character in the seat of their predilection, in their form of patches or distinct scattered tumours, in their ligneous hardness from the outset, and their peculiar tendency to reproduction. I agree in this respect that they should belong to the class of scirrhi.

§ II.—*Fibro-scirrhus Degenerations.*

The scirrhus transformation of the breast, in my idea, occurs under three varieties, quite distinct, according as it attacks the interlobular partitions, the secretory tissue, or the lactiferous tubes.

A. *Ramified Scirrhus.*

When the scirrhus degeneration attacks the layers which surround or separate the different lobules of the mammary gland, there results an unequal, hard, badly circumscribed tumour, insensibly disappearing as we approach the skin or arrive beyond the gland, having the form of radii or bands which are nothing but indurated fibro-cellular layers. Perhaps, in such a case, the disease does not essentially differ from the ligneous scirrhus last described, except that it attacks the deeper layers and even the enveloping tissue of the glandular corpuscles. However this may be, it is in this case almost impossible distinctly to define the limits of the healthy or diseased structure. An incision of the gland shows it to be traversed by lardaceous, hard, grayish bands, creaking under the incision of the scalpel. I have frequently seen the radii of this scirrhus prolonged very far towards the axilla, turning down under the grand pectoral, and gaining rapidly in all directions.

It is, perhaps, this kind of scirrhus degeneration which it is most difficult to remove entirely, and on this account it is most exposed to reproduction.

B. *Glandular Scirrhus.*

If the remark be true that the ramified form of scirrhus finishes, in the end, by inducing this same disease in the secreting tissue, it is no less true that this transformation commences quite often by the lobules of the gland, and attacks only secondarily the fibro-cellular element. In this case the tumour is knotted, as if corded on its surface, movable, hard, and sufficiently circumscribed: it occupies sometimes the whole and sometimes only a portion of the gland. It nearly always gives the idea of a globular body without radii or roots springing from its circumference. I have seen some women in whom the whole breast appeared to be thus attacked and hardened from the commencement of the disease. In one of these the left breast, which had attained only the double of the other, represented a hemispheric mass, of the consistence of wood, planted, as it were,

in the front of the chest. Every part of the tumour having become degenerated, it was removed together with the integuments, the wound of the operation was reduced four fifths, and every thing appeared to promise a speedy cure, when the disease appeared in the opposite gland. We were also witness at the hospital of a transformation, which, in less than six weeks, gave to the whole extent of the gland and integuments the hardness of cartilage, without the patient's having the least knowledge of it, or experiencing any pain, and without our being able to arrest the progress of the singular degeneration, or observe that any one point of the organ had ever been primarily attacked.

However, whether the scirrhus degeneration begins by the secretory or the fibro-cellular element, it is not the less true, in either case, that the breast is hardened rather than swelled, transformed rather than deformed, and that, after a certain time, all the elements of this part are confounded into a mass, the limits of which are never well defined. After a longer or shorter duration these tumours finish by becoming soft, and being absorbed or ulcerated upon some one of their points: these ulcerations then become excavated, with hard, irregular raised edges, and a grayish, sanious, usually dry and rugous base. It is this variety which practitioners of the last century described under the name of the *ligneous cancer*. It is also this species which, in persons advanced in life, proceeds with less rapidity, sometimes even permitting the ulcerations to cicatrise in part, and thus existing fifteen or twenty years without compromising the life of the patient. It differs from the two other ligneous varieties, above described, hardly in any thing besides its progress, and its concentrated form.

C.—*Scirrhus of the Lacteal Ducts.*

I have, four or five times, met with a tumour of the breast, which I have never seen described, and which has appeared to me to occupy the lactiferous tubes. The most remarkable of these tumours was removed by me, from one of the first women I operated upon at La Charité. The disease was of eighteen months duration; it had been preceded by a lactation attended with no irregularities, and no external violence could be assigned as cause. The tumour, slightly flattened and but little painful, was of half the size of an ostrich egg, and occupied the whole right breast, slightly knotted, without any adhesions to the skin, without any circular lines leading from its circumference; it showed, upon dissection quite a peculiar disposition of tissue. Its consistence did not sensibly differ from that of scirrhus, but an incision showed it, instead of being homogeneous, to be punctured or dotted with grayish spots like granite: in addition it presented an infinity of open orifices, giving it the appearance of a strainer. These orifices, seen in whatever direction the tumour was incised, and which were several dozen in number, were from a line to a line and a half in diameter. Lined on the

inside with tuberculous or caseous concretions, they were in close adhesion externally with the glandular tissue, and followed in all directions the course of the lacteal ducts. It was, besides, easy to introduce a probe to the distance of several lines; and in one case we were enabled to follow the course quite to the root of the mamma, and assure ourselves that these really were the excretory canals of the gland.

Besides, all the intermediary elements had passed to the state of the lardaceous degeneration like scirrhus, so that it was impossible to distinguish the glandular bodies from their fibro-cellular investments. One particularity not to be forgotten is, the ashy gray or even slightly red appearance—like the partridge's eye, or small chancres—of the orifices of these canals. The woman, who was still young, was perfectly cured; I operated in 1835, and saw her again in 1838, without the least signs of reproduction.

I removed a tumour of the same species at La Pitié in 1833; but the result was less happy. The cicatrization was two thirds completed, when an ichorous exudation quickly replaced the suppuration towards the axillary angle of the solution of continuity. Upon a careful examination of this part, I perceived three open orifices about a line in diameter, having the grayish aspect of venereal chancres, apparently continuous with some tubes either sanguiferous or otherwise, situated upon the centre of small indurated masses, and easily permitting the entrance of a probe, for the distance of three or four lines. As they were painful, and the glands of the axilla had begun to tumefy, I seized them with a hook and extirpated them. The wound cicatrised: an abscess appearing soon after in the axilla, was opened and disappeared; but new scirrhus masses returned at the end of some months around the cicatrix, and caused in less than a year the death of the patient. Were these the remains of some degenerated lactiferous canals, or rather the propagation by continuity of the cancerous degeneration along the vessels, either lymphatic, venous, or arterial? The verification of this, I think, would be difficult. It is not the less certain that this form of tumour is worthy of arresting the attention, and that it differs sufficiently from all others, to make a species apart. Every one will see clearly, that if it be true that it has its principal seat in the lacteal tubes its limits will naturally be well defined, and after its extirpation we shall hardly have to fear the reproduction of the evil.

ART. 3.—*Indurations and Neuralgiæ.*

The mamma is still further subject to some kinds of indurations which should be signalled in this connection. I have met three species, which I would point out.

§ I.—*Induration in Masses.*

One of these species is characterised by a manifest induration of a part, or the totality of the gland. This induration, only appreciable by the comparison of the diseased with the sound gland, and by the inequality of density in the various lobules, supervenes, in general, slowly. It is accompanied with a complication of deep-seated, dull, and lancinating pains. The gland appears knotted without any augmentation of volume, and, besides, there is no indication of the least tumefaction or inflammation. Women are most exposed to it between the ages of twenty-five and forty: I have met it, however, in persons at the critical period, and in young girls in whom the menstruation was established with difficulty.

The causes of this disease have always appeared to me difficult of appreciation; celibacy, troubles and irregularities of the uterine functions are, I am inclined to think, its most general predisposing causes. I have seen, sometimes, the induration in question arise insensibly under an eczematous or impetiginous affection which had for a long time occupied the areola of the nipple. The induration of the gland, was it here the cause or the consequence of the cutaneous affection? However it may be, this kind of lesion, which may possibly be confounded with the ligneous or fibro-cellular degeneration of the breast, merits all the attention of practitioners. In fact, abandoned to itself, it often disappears entirely. I have never yet seen it degenerate into scirrhus or encephaloid disease, and we can triumph over it by very simple means. Thus, abstracting the indications furnished by the state of the uterine functions and general health, we may satisfy ourselves with camphorated brandy lotions, or solutions of ammonia in water. Compresses wet with Goulard's solution, or emollient poultices may be immediately employed: the sedative ointments and liniments, belladonna in frictions three or four times a day, suffice nearly always in the more rebellious cases. A few applications of leeches around the breast would not be unadvisable, if the patient were stout and young, and there were any evident signs of too great irritation. Compression, the ioduretted, or mere mercurial ointments are rather hurtful than otherwise, and it is never necessary to have recourse to the ablation of the tumour.

§ II.—*Nodosities.*

The second form of induration appears under the form of nodosities or *granulations*. These indurated grains are scattered around the gland and under the border of the pectoral muscle. It is evident that they are no new productions, but merely the natural glandular lobules. The simple touch is manifestly painful, and the pains, which exist constantly, are usually sharp, lancinating and radiating in all directions: they are similar to neuralgic pains, returning in

paroxysms at different hours of the day or night. Women are at times so tormented by them that they dare not move the arm and head, and the least contact of their dress excites a renewal of their torments. I have observed this species of induration in young girls from eighteen to twenty-five years of age, but much more often in women who approach their grand climacteric, whether they have or have not had children, or been regular or irregular in their catamenial function. It appears, as in the preceding case, to be connected with the state of the uterus and its functions, and may continue several years causing considerable concern to patients, but ought never to inspire any solicitude on the part of the surgeon. The progress of age seldom fails to cause their disappearance, and I have never seen any one undergo any unpleasant transformation.

The treatment which succeeds best is exactly that for induration in masses, of which I have just spoken, except that the emollients and poultices in particular are generally useless, and we succeed better with the employment at the outset of leeches or narcotic liniments: the liniment which has succeeded best with me is,—oil of sweet almonds, a few ounces, laudanum of Rousseau if the irritation be great, of Sydenham if the neuralgia be the prominent symptom, two drams, extract of belladonna one dram.

§ III.—*Neuralgia.*

In my third species of neuralgic indurations of the breast, the nodosities are so slightly developed that it is sometimes entirely impossible to recognise them. The disease is then indicated only by radiating pains, a slight heat and numbness in the mamma: the prognosis and treatment are otherwise the same as in the two other varieties. A corset, contrived to maintain the glands pushed inwards rather than towards the axilla, is an essential part of the cure. It must moreover be well understood that, in all three varieties of this disease, the patients experience generally a well marked exacerbation towards the menstrual periods, and that the fears of the patient and her friends are due principally to these species of access and the almost indefinite duration of the disease.

No author in France has as yet noticed this species of affection of the mamma; but Sir A. Cooper appears to have observed it, when he describes, under the title of *neuralgia* or *irritable tumour of the breast*, a disease with or without tumour, occurring between the ages of sixteen and thirty, and accompanied by radiating pains seated in the substance of the gland. In describing hard tumours situated in the gland, or towards the axilla, rarely exceeding in size a nut, accompanied with some pain, and ascribed by patients to chagrins, to the frictions of their dress, and which are augmented at the menstrual periods, Mr. Colles (in *Surg. Anat.* p. 128,) probably wishes to describe the tumours which I am at present noticing. The solution of the acetate of ammonia, of camphorated brandy, from which the author says he has derived advantage, aid

my supposition. I cannot too strongly engage practitioners to remember the few details which I have given, without which they may be unnecessarily alarmed, and perhaps subject their patients to bloody operations which are almost never required.

ART. 4.—*Anormal Productions.*

The different anormal productions, to the growth of which the mammary region is subject, form two grand classes ; the one constituting the cysts, or tumours filled with contents more or less liquid ; the other including a considerable quantity of solid tumours.

§ I.—*Cysts or liquid tumours of the Breast.*

Authors who have paid the most attention to tumours of the mamma, Sir A. Cooper, and Dr. Warren in particular, have described, under the head of the *liquid tumours*, only what they called hydatids of the breast. They are, says the former of these authors, productions not *cancerous*, susceptible of acquiring an immense size, appearing in some instances solid, movable and pendulous, and containing a serosity slightly glutinous ; the interior of these tumours is cellular, and contains often true hydatids. Dr. Warren (on Tumours, see p. 206.) quotes the example of a tumour of this species which weighed twelve or thirteen pounds, containing an infinity of small hydatid globules. In one of the patients of Sir A. Cooper, the hydatid cyst weighed nine pounds.

After being emptied these tumours are re-filled quite slowly, and sometimes not at all, as the English surgeon remarks. In other cases their openings remain fistulous and exceedingly difficult to heal ; so that, provided they have attained any size, extirpation is the best and perhaps the only remedy.

My own observations would incline me to establish several kinds of cysts in the breast.

A. *Hydatid Cysts.*

The serous or hydatid cyst described by English authors is very rare. I have only observed a single case in a female ; but I possess one very remarkable, occurring in a young boy, and to which I shall refer hereafter when speaking of these diseases in the male. Judging by the fact which I have myself observed, and by those reported by Sir A. Cooper and Dr. Warren, these serous cysts are developed without any manifest cause, in women of all ages and constitutions ; but it must not be forgotten that these tumours, increasing without any pain, are seldom recognised except accidentally, and then only when considerable progress has been made. Their increase is generally very rapid, since they may acquire the weight of several pounds in less than a year. As their increase is unlimited, it is very evident that, abandoned to themselves, they

must at length form quite a dangerous disease; our remedies ought then to be applied as soon as the patient consents to pay any attention to her situation. The topical resolatives, as the iodine ointments, compresses moistened with the muriate of ammonia in solution, and aided by compression, might perhaps triumph over the disease in some cases, if employed immediately. But if the tumour have existed any time or is at all voluminous, surgical means alone offer any hopes of success. If, however, the patient obstinately refuse the operation, we might essay the application of a large transitory blister.

The operation proper for the disease will doubtless vary in different cases; but I can hardly believe that the total extirpation of the tumour and surrounding integuments, as recommended by Sir A. Cooper and Dr. Warren, is always indispensable. The method which I should practise before all others would be, that of the treatment of hydrocele by injection. If a puncture by the trochar completely emptied the sack, I would inject a mixture of tincture of iodine and water in the proportion of two drams to the ounce, and I should not have the slightest doubt of success. Supposing a single puncture did not suffice to empty the tumour, I can see no obstacle to operating successively on each of the other tumours. The liquid which I recommend may be left without difficulty or danger in the sac, producing only a moderate reaction, and no inconvenience that I am aware of. Whatever may be the case, I have perfectly succeeded in the only instance where I have employed this treatment, and of which I shall have further occasion to speak.

As in these cases there is no new tissue nor morbid degeneration: if the injection is not efficacious in producing the cure, it is almost certain that the incision of the cyst and dressing from the bottom would induce a suppuration, and transform it into an abscess. In traversing also the tumour in different directions with setons, we should probably produce the same effect. I should not be astonished if a single incision maintained open by means of a tent, and the injection from time to time of some irritating liquid should prove equally efficacious in a certain number of cases. Upon the whole then, I think the serous or hydatid cysts of the breast should be treated like hydrocele, or a large abscess, and that the extirpation should only be proposed as the last resource after the failure of other less severe remedies.

B. *Sero-sanguineous Cysts.*

Besides the variety of cyst just noticed, and which can be generally reduced to a single tumour, there are two other species, one multilocular, the other unilocular.

The *multilocular* cysts which I have met in the breast contained a black or reddish liquid matter, possessing some analogy with the menstrual fluid. An unmarried female, aged twenty-six, enjoying

otherwise good health, had thirteen of these in the left breast. Before removal, these tumours gave to the breast the knotted and fungous aspect and consistence of encephaloid disease. The absence of all pain, and the natural condition of the subcutaneous tissue, with the slow progress of the disease, prevented any mistake as to its nature. Of the cysts in this case, developed in the interlobular cellular tissue, the parietes of which were slightly indurated, or like lard, two had the size of a small hen's egg, some were equal to walnuts, while others were not larger than filberts. In no case was there communication from one cyst to another, they were all separated by a certain thickness of healthy tissue. The distinction between them and the glandular and other elements of the part was very easy, thus proving them, in a word, to be, not degenerations, but only simple anormal collections between the primitive layers of the mammary gland.

This kind of cyst then is recognised by the knotty feel of the tumour, the absence of any morbid thickening, wasting, or coloration of the integuments, as well as of all pain or concomitant affection of the general health, by the sensation in the examination of the part of globular, elastic, fluctuating masses, simulating fungosities, as also by the slight developement of each individual mass.

The collective or sero-sanguineous cysts of the mamma appear due to two classes of causes: external violence, or uterine influence. All my patients have accused some blow, some accidental pressure of the breast, as the origin of their trouble. In the one, it was a blow received from an elbow; another had struck the part against a piece of furniture; while a third had received upon the breast a bundle of goods which she was removing from a shelf of her shop. It has seemed to me that unmarried females were more subject to these affections than married, and two patients in this latter condition had frequently suffered from amenorrhœa. The connection, however, between these causes and the disease is not always evident. Only, observation having taught us, the appearance at the menstrual periods of ecchymoses in the breasts of a certain number of females, especially those who voluntarily or otherwise lead a life of celibacy, which, under the influence of disorder in the uterine functions, or of a constitution disposed to serous or sanguineous effusions, establish themselves permanently in the gland, I think we may adopt, at least provisionally, the hypothesis which I have proposed. Starting from this point, it will be easy to explain the variety in the number of the cysts, their developement so tardy, or even ceasing altogether to resume itself after a lapse of years, the persistence of the general health, as also the varieties in the fluidity of the matter contained, as well as in the colour, sometimes simply reddish, or yellowish, at other times a deep black; and finally, we can understand how the organic elements seem to suffer only mechanically, and remain for years in the neighbourhood of these tumours without degeneration.

However this may be, the prognosis in these cases is by no means grave. It is not unfrequent to see them remain stationary several years, and then disappear spontaneously. Marriage often produces this result in young girls, and the critical period in older females. It is true, however, that in the great majority of cases, they persist to an indefinite period and degree, if no remedy be applied. Like the serous or hydatid cysts, these tumours do not appear connected with any particular constitutional affection, and are in fact entirely local. Being wholly free from any malignity, the patient once rid of them, need apprehend nothing for the future.

The *treatment* of these sero-sanguineous cysts is to be regarded under three points of view : 1st, As hygienic. 2d, As topical. 3d, As regarding operations.

The hygienic and topical means are sometimes sufficient if the tumours be small. In the commencement, a few applications of leeches around the gland, or at the vulva, in case of amenorrhœa, the use of compresses wet with sal ammonia in water, wine or vinegar, the iodine ointments, compression, with transitory blisters. After some probabilities of success in this stage of the disease, also, whatever may have been its length, marriage or pregnancy ought, if possible, to be attempted, before recourse to surgical means. It will also be well to administer the preparations of iron internally. Supposing the disease to be very ancient, and these first remedies to have been inefficacious or impossible, the patient might be recommended to neglect these small tumours, if they inconvenience her but very slightly from their volume or weight. In the contrary case, where there is some fear for the future, either from the continual increase, some tendency to degeneration, or the absolute desire of the patient to be free from them ; we must choose between extirpation, the seton, and incision. If the diagnosis could always be exact, and there were only two or three cysts, the incision or the seton might either be employed. But since in this manner we should rarely fail of leaving some few cysts, and as we are never certain of their nature before incision, it is both more certain and more prompt to extirpate them. The operation, moreover, is simple and easy, and the cure is rapid, and free from any danger of return of the disease.

C. *Sero-mucous Cysts.*

The female breast is also liable to the developement of cysts, containing matter of a gray or yellow colour, of a mucilaginous aspect, and almost completely liquid. I have met with but three examples of this variety, and in these three the disease presented itself in such well marked characters, that I, of course, studied with considerable care both its nature and origin. In one of these women, the tumour, the size of a walnut, was situated interiorly and inferiorly ; in another, it was directly inferiorly, and in the third, it occupied the superior part of the breast. In this latter case, it dated

since three years, and appeared to have originated in a blow received from the elbow of another person : this blow applied upon the lower part of the organ, was followed by a large ecchymosis, which persisted for a long time above the nipple. The existence of the tumour at this latter point was not perceived till after several months, without pain or any constitutional affection ; this tumour acquired, in the space of a year, the size of a small hen's egg. The patient unmarried, and aged twenty-two years, experiencing from time to time some twinges in the part, came of her own accord to La Charité, to ask me to operate. The tumour was perceptible in the subcutaneous layer, as if formed by one of the most prominent lobules of the gland ; there being no existing inflammation, the surrounding tissues perfectly healthy, and the tumour presenting, besides, an elasticity very like that of the fibrous or fungous tumours, I was at first in considerable doubt as to its true nature : the operation alone taught me that it was filled with an unctious gray fluid, strewed with whitish points.

In addition, this cyst was remarkable for the ossification of its parietes, like the arteries in old men ; it might be said to be formed by an osteo-calcareous layer, thin, flexible, crackling like parchment under the finger, and adhering closely to the surrounding tissue : the glandular as well as the other elements of the part preserved their natural state, and the young woman enjoyed, in other respects, perfect health.

These cysts, with open parietes—the description of which I find no where given,—are not to be confounded with the osteo-form productions which I shall notice hereafter. In the two other cases the contained liquid possessed the same characters as in the preceding case, but the parietes had not undergone any of the calcareous transformation.

The etiology of these tumours appears to me similar to that of the sero-sanguineous cysts, *i. e.* that they originate in an effusion of blood or lymph in the thickness of the breast : that, in consequence of a blow, or some internal process, a portion of blood is effused into the breast ; and we may expect in this region all the affections consequent in other parts of the body upon these deposits or infiltrations. If the blood be simply infiltrated, it will disappear, without trace, by absorption ; but if it be deposited in quantity there may result a coagulum capable of producing a superabundant exhalation of the liquids which traverse the cellular tissue, and consequently a tumour liable to unlimited increase ; and supposing several of these collections formed simultaneously, we have those multiple cysts of which I have spoken elsewhere. When there exists, from the commencement, only a single deposit, the effused fluid becomes altered, and is the origin, 1st, Of a solid tumour, when the concrete parts of the lymph or blood predominate ; and, 2d, Of a liquid tumour, if it be the serous portion of the fluid which is in superabundance. In this latter case the liquid contents, more or less primarily coloured, may preserve indefinitely their reddish

tint, as in the sero-sanguineous cysts; in general, however, they lose their colour little by little, and finally assume the mucilaginous, oily, or serous appearance of the synovial fluid.

The oleaginous cysts which have lasted several months do not appear capable of a spontaneous disappearance. There is also every indication that nothing external or internal, save surgical means, can have any prospect of a triumph over them. These tumours resemble very closely both in causes, symptoms, prognosis, and the requisite therapeutics, the sero-sanguineous cysts. After a previous attempt at resolution by the topical remedies, which I have mentioned, recourse must be had to their incision, or, better still, to their extirpation, provided the parietes appear thickened, or manifest any tendency to degeneration. If we confine ourselves to incision, it will be at least necessary to extend it throughout the tumour, and to dress the cavity so as to obtain its suppuration and cicatrisation from the bottom. But the extirpation is very simple, unattended with danger, and followed by a wound which closes generally much quicker than that from the incision of the cyst.

§ II.—*Solid Tumours.*

The abnormal growths in the breast, which may be styled solid, are divided into two classes: one comprehending the non-malignant, and the other the cancerous or malignant tumours.

A. *Non-malignant Tumours.*

The category of these productions includes four species sufficiently distinct: the fibrinous, the tuberculous, the milky or butter-like, and the osseous tumours.

I. *Fibrinous Tumours.*

Under this title I include masses varying as to colour, consistence, and manner of union with the surrounding tissues, but which have the common characteristic of being, as it were, enclosed in one or more cysts, of resembling foreign bodies in the midst of the tissue, and of possessing no analogy whatsoever with the natural organic elements of the economy. The volume of these tumours varies from that of a filbert to that of the head; they are usually knotty, irregular, elastic, or causing the sensation of the presence of fungosities. Upon incision, they give the idea of a lymphatic gland, with its tissue rarefied, or enormously hypertrophied, lobulated, friable, and breaking down under the finger: in some instances they resemble closely ancient fibrinous concretions become organised. They possess in some cases sufficient firmness and homogeneity of tissue to simulate the texture of scirrhus or fibrous productions. It is also generally possible to enucleate them entirely,

without at all destroying the species of organic sac which they have formed for themselves.

These sorts of tumours occur more often in young women and those who are not married. They have seemed to me to recognise for cause an effusion of blood, or some lymphatic concretion in the tissues. They would therefore belong to the same section as the sero-sanguineous or gelatinous cysts, which frequently accompany them, and would result in the same manner from contusions, abnormal effusions, or some trouble of the circulation, either of the lymph or blood.

True foreign productions, they flatten, compress, or separate the natural tissues without affecting their structure. It is most generally possible to discern in them the characters of fibrine or solidified and organised albumen; if I insist upon these characters, it is because, if true, it follows, as consequence, that the fibrinous tumours of the breast may extend almost indefinitely without compromising life: that they have only a very slight tendency to degeneration, that their transformation into cancer is not yet demonstrated, that in removing them it is useless to take a great portion of the healthy tissue, that in reality they may be enucleated, leaving the glandular tissue untouched; and being once destroyed, we need have no fear of reproduction. I have met this production sometimes on the deep-seated surface of the gland, and sometimes superficial, most generally at some point in the circumference of the breast; their progress is generally slow and irregular. Abandoned to themselves, they are almost never cured. After a lapse of time, they may acquire an enormous volume, dissolve, inflame, and fall into gangrene. Let them cause ever so little embarrassment, and the patient desire to be freed from them, there should be no hesitation in their extirpation. To attack them topically by compression, or internally, would be loss of time, and expose perhaps the general health of the patient: the knife is the only resource in these cases. Their removal, which I have practised a large number of times, has always been easy and unattended with danger. All the patients operated upon have rapidly recovered, and I have never seen the reproduction of the disease.

II.—*Tuberculous Productions.*

The tuberculous affection of the breast has never been very precisely described, whether from its seldom occurrence, or from its connection with other alterations of the part. I have never yet met it in the simple state: but I have often seen tumours of that complex form, like those described by Sir A. Cooper, as *scrofulous*. It seems to me moreover, that this kind of production comprehends three sufficiently distinct varieties; there is one of them which I have often met, and which is often combined with the ligneous degeneration, either of the integuments or subcutaneous tissue of which I have before spoken. In this case there are observed

patches, or small tumours, hard, reddish, and as if lost in the cutaneous tissue, if they occupy this part; movable, round, and globular, when seated in the cellular tissue, but presenting at their interior a quantity, sometimes considerable, of caseous matter, in some cases dry and friable, in others partly liquid or purulent. Quite often, also, small lines, hollow canals, or little passages, apparently fistulous, extend from one of these tumours or patches to another: the point of the gland is sometimes pierced like a sieve, or furrowed by little cysts with thickened parietes, horny patches, and lines of albumen or concrete pus. This variety of the tuberculous affection resembles, besides, in all respects the ligneous cancer of which I have before spoken, and perhaps it is the same only in a degree more advanced.

In other women, I have met in the thickness of the mamma seven or eight tumours varying in size from a filbert to a walnut, and apparently constituted by the same number of lobules, including equally both the secreting and fibro-cellular tissue, softened at the centre as if infiltrated or filled with tuberculous or caseous matter. The disease in one of these cases had existed four years, and was due, according to the patient's account, to a blow received from the elbow of another person; one of the axillary glands, which had acquired the size of a large walnut, was also crowded with tuberculous or cheesy masses. Although the lungs appeared healthy, and there was tumefaction of no other of the glands, the patient had been of delicate health, and was of a temperament manifestly lymphatic.

A woman, who remained a long while at the Hospital of the Faculty where she finally died, presented in her breast some tumours which bore all the characters of degenerated lymphatic glands, and which were speckled with grayish points as in the tuberculous affection: but this patient presented such a number of these tumours every where, both where anatomy has demonstrated the existence of lymphatic glands and where they have never been discovered, that I hesitate to class these tumours of the breast, which were dissected by M. Lenoir, among the scrofulous or tuberculous. This is, however, perhaps the only known case where we can suppose the existence of lymphatic glands in their rudimentary state in the breast.

However this may be, the three classes of tumours under consideration are rather rare. The last is only an exception which it would be useless to notice. The ligneous tubercles should not be separated, in prognosis or diagnosis, from the degeneration of the same name. There remain, then, the fibro-tuberculous tumours; these, always remaining quite small and developed very slowly, arise sometimes from some external irritation and sometimes without any known cause. Pale, delicate, lymphatic females with flaccid tissues are more particularly exposed to their occurrence. The glandular tumours, which are often coexistent in the axilla or at the neck, acquire at times a volume, much larger than those of the

breast. These latter are frequently accompanied with lancinating pains, returning in paroxysms, or at least varying in severity from a variety of circumstances. At first they are hardly distinguishable from the natural lobules of the gland, of which they for a long time preserve the elasticity and a part of the softness. It is only by pressing the gland from before backwards, or from side to side that we are able to convince ourselves of their existence: they are further recognisable by their volume, by the relief which they form, and the pain and sensibility of which they are the seat.

These fibro-tuberculous productions of the breast are not in themselves of unpleasant prognosis, but inasmuch as they are the sign of an impaired constitution, they should naturally inspire some inquietude. Abandoned to the resources of the constitution, they would continue to increase in size and number; their resolution would seldom be obtained by the aid of ointments, blisters, or compression: they would finish by ulceration and transformation of the breast into a number of purulent cavities. The only treatment which can offer any chance of success, is their extirpation: but this will be resolved upon only in cases where the general health of the patient has been so little affected as to offer no decided counter-indication; I would also, in these cases or in the ligneous cancer, remove a sufficient quantity of healthy tissue to be perfectly sure of leaving no diseased tissue. After the operation, the appearance of the disease in other lymphatic glands is to be apprehended, but in the breast, there has appeared to me very little tendency to reproduction.

III.—*Butter-like Tumours.*

A kind of tumour of the breast which has never yet been described, is what I would style the butter-like, or cheesy tumour. The secretion of the milk has never yet been sufficiently examined in connection with the diseases of the gland. Observation has shown me, that besides the milk congestions of nurses and the cysts formed by the retention of milk in the lactiferous ducts, there exists also a species of solid tumour formed by the milk: the most remarkable and most conclusive proof with which I have met deserves to be detailed in this connection. A woman, aged about forty years, of small stature, otherwise in good health, having nursed several children, was admitted at La Charité in December 1837. This woman, who lived in the country, presented in the right breast an indolent, hard tumour, the size of the two fists, with very marked nodosities, and of a consistence between that of the fibrous and encephaloid, before softening has taken place: the tumour was movable without redness, but some absorption of the integuments had already taken place: it dated only some eight months, and followed a lactation, in the course of which there had been a slight congestion of the breast; not finding here the characters either of scirrhus, encephaloid disease, the cysts, the degenerations or pro-

ductions already noticed, I presumed that some portion of the milk concreted or hardened, might be the point of departure. After the extirpation we found the mass, contained in the flattened and altered interlobular cellular tissue, essentially composed of a yellow firm concrete substance, having the appearance of cheese or butter, nearly dried: struck with this, I requested M. Donn   to examine the molecular composition of the tumour, and the following is the result in his own words. "The matter remitted to me by M. Velpeau, presents the appearance of a kind of coagulated caseum. In pressing it out and submitting it to the microscope, there are seen a multitude of globules analogous to those of the milk, soluble like them in ether and alcohol, and insoluble in ammonia; they are interspersed with the mucous globules and the granular corpuscles of the colostrum. The gland itself being compressed furnishes similar globules. Water agitated with this matter becomes white as with milk, and contains the same globules." I should add that this tumour being reproduced after the operation, and largely ulcerated, allowed the extraction, without the least pain, of large pieces, which, examined anew by this skilful observer, have shown not only the globules and granular corpuscles, but all the other elements of the milk; the naked eye was, however, sufficient to convince one that the tumour was actually formed by milk coagulated for some length of time.

Dupuytren had already spoken in his lectures, and caused to be published some observations (Paillard. Jour. Heb., 1829) of cysts of the breasts containing milk or butter; but in these cases there was question only of the milk liquid, semi-liquid, or incompletely coagulated, and I have no where found any account of solid tumours formed exclusively by milk. The developement of similar tumours is by no means surprising. Certain irritations of the mammary tissue may cause the infiltration of the milk out of its natural channels, and the formation of anormal collections. Perhaps it would be necessary to allow for the milk what I have found to take place with the blood in all other parts of the body: in fact, it is difficult not to admit that the milk may infiltrate itself beyond its natural ducts, either by simple transudation, or some rupture of the parts. This being granted, it is evident that the milk may diffuse itself into the cellulo-fibrous and cellulo-adipose tissues, as the blood does into all possible tissues after contusions or ecchymoses. Under this form the gland appears as if soaked in milk or lactescent serum, to such an extent that absorption is no more possible than in a large ecchymosis. A woman with the breast transformed into a spongy mass, very perceptible within a few days, afforded me another example, in 1838, of that milky infiltration: from an exploratory puncture, I saw exude quite an appreciable quantity of a milky fluid, which came evidently from the cavities of the cellular tissue.

It is moreover not indispensable that the milk should be out of its natural channels, to constitute these collections: we have already seen

that, retained in its ducts, it may dilate them here and there, so as to transform them into cysts of considerable size ; if then this liquid, instead of being infiltrated, be collected into masses of any size, it may, like the sanguinous deposits, 1st. Remain a shorter or longer time in the state of deposit, but slightly painful. 2d. Be decomposed so as to be replaced by a serous cyst, if the caseum be the first absorbed, by a solid, or semi-solid mass if the serum be the first removed. 3d. It may become irritated, inflame, and transformed into a true milk abscess ; and lastly, it is evident that, retained in the lactiferous ducts, or effused into the interlobular tissue, the milk once coagulated, may, confounding itself with the fibro-cellular element, become concrete, and more and more hardened, like the coagulum, or fibrin in sanguineous tumours, and thus become the origin of a tumour, containing a matter similar in all appearance to butter or cheese.

The butter-like tumours of the breast may acquire an enormous developement, and occupy almost the whole of the gland. A more extraordinary fact is, that in the patient noticed above, tumours perfectly similar were developed secondarily, like encephaloid masses, without the circumference of the breast, in the axilla and under the clavicle. Can then the milk be accidentally secreted in the axilla, as Messrs. Siebold, Moore, Lee and Stanley, cite each an example, or by any other element foreign to the mammary gland ? We would suppose *à priori*, that tumours the result of effusions of fibrin, albumen or milk into the gland once removed, would inspire no fear of reproduction ; unfortunately this is not the case ; in fact, in the case which I have detailed above, the tumour, although completely removed, did not delay its reappearance. A little cluster of the same aspect as the former was remarked in the upper portion of the cicatrix before its complete closure. There appeared afterwards others in the axilla, on different points of the gland, under the cicatrix itself, and finally in its whole circumference ; the developement was so rapid that at the present moment, (May, 1838,) four months after the operation, they form collectively a mass the size of an infant's head, the knotty tumours of which, entire in some parts, and largely ulcerated in others, cannot be distinguished from encephaloid disease, except that they present here and there portions of real cheese, very evident and easy of extraction.

Thus, 1st. The milk, the blood and pus are susceptible of undergoing in our tissues, such transformations as would encourage the belief that many tumours originate in effusions of this nature. 2d. Without so much risk of reproduction or constitutional infection, as tumours really cancerous, certain fibrous and milky productions do not appear perfectly free from that danger.

The treatment of these tumours will vary according to their age, whether liquid, semi-liquid, or already firmly concremented, and also according to their size. Having already spoken of the milk congestions, I have here only to notice the solid milk tumours ;

supposing the whole gland to be equally infiltrated by the concrete elements of the milk, representing a disc, hard, though slightly œdematous, and not painful, a disc from which pressure could still cause milk to exude, it would be better to apply a few leeches around the breast, or even venesection, cathartics, and the camphorated or ammoniacal liniments. If on the contrary the tumours are hard, their contents being perfectly concrete, and the disease already of some standing, these means will be entirely insufficient, and there remains only extirpation to save the patient. Perhaps it would be better to remove the whole mamma in these cases, even although the disease may be only partial. We have to fear that the affection once commenced in the gland may continue, after the operation, in the parts preserved. In the woman on whom I operated, the disease returned in those parts of the gland which I had respected; and I regretted not having sacrificed the whole at once.

IV.—*Osseous Tumours.*

The breast may be the seat of very different osseous productions. These have been observed, and I have seen cases myself of calcareous or osteo-calcareous concretions after abscess, and long inflammations. This kind of concretion, the result of purulent, sanguineous or milky collections, is not exactly what has been styled *the osseous tumour of the breast*. Sir A. Cooper speaks of a young girl who had one of these at fourteen years of age. His description of it is not sufficiently detailed, that we can be sure that it was really a case of a tumour completely osseous; but it is at least certain that this tumour resembled the productions known under the name of *osseous* or *accidental osteoform masses*.

In this case recourse was had to extirpation, and the patient perfectly recovered.

I have already related the case of a gelatinous cyst, whose parietes were transformed into a bony shell. I have also several times seen the breast appearing as if traversed by very extensive osteo-calcareous layers, species of partitions or needles. In one patient these osteoform stalks, as fragile as glass, appeared to occupy the interior of the lactiferous ducts. Most generally they have appeared to me seated in the thickness of the fibro-cellular interlobular partitions; and often I have found them in the thickness of the different varieties of scirrhus.

Alone these osseous tumours could not constitute a serious disease, and their developement generally ceases before they can acquire any great volume. Nevertheless, as they are an unceasing source of irritation to the surrounding tissues, they are not the less a perpetual cause of pain and other diseases; co-existent with other diseases, they cause no difference either in the prognosis or treatment; but when they themselves are the primary affection, their treatment is reduced to a single point; they must be left to themselves, or extirpated.

Their extirpation is usually easy and sure, if they be round, movable, and well limited; but before we take the knife in hand, it is necessary to examine carefully if there be no irregular osteoform radii, partitions or patches. We have the further advantage in the extirpation of these tumours that there is no danger of reproduction, provided the whole of the degenerated parts be primarily rooted out.

B. *Malignant Tumours.*

The malignant tumours of the breast comprise the scirrhus, encephaloid, colloid, and melanotic productions.

I. *Scirrhus.*

The breast has always appeared the chosen seat of this species of tumour. Here it is that scirrhus has been observed in all its forms. Thus, the ligneous patches of the skin, the ligneous subcutaneous masses, the ramified, glandular, and radiating degenerations of the lacteal ducts, which have been described in a preceding paragraph, are only varieties of the scirrhus. It must be added, however, that scirrhus, properly so called, is here as elsewhere not a simple degeneration of tissue, but an actual new production. Although combined with the natural elements of organs, so as to render all distinction impossible, the scirrhus does not the less show itself with the characters which properly belong to it; that is to say, under the form of a hard tumour slightly knotty or irregular, often adherent to the skin: being the seat of lancinating pains more or less excruciating, and which form ulcers, which corrode, indurate, and shrivel up the surrounding parts; their incised surface is of a slightly bluish homogeneous gray; they are enveloped with no cyst, they become, as it were, ramified, in extending into the adjacent tissues, from which we can sometimes cause to exude, by pressure, a creamy matter, of a tuberculous or semi-purulent aspect.

The scirrhus of the breast which has always been the base of the cancer styled *ligneous*, generally is not the consequence of any violence to the part. Some patients, it is true, accuse a blow, some friction or the like; but in all these cases we can generally convince ourselves that the blow has been only a coincidence with the commencement of the disease, or the circumstance which has called the attention of the woman to the part. This, however, is a question belonging to scirrhus in general, and not to the particular variety now under consideration. The scirrhus having an extreme tendency to reproduction, or to occur simultaneously in some of the viscera, forms a tumour of a most unpleasant prognosis. Its treatment is entirely surgical. To attack a well-marked scirrhus with topical remedies, sanguineous depletion, or constitutional

remedies, would be to say to the patient that we did not wish to attempt the treatment.

The caustics and the knife can only be opposed to it with any chance of success. We should still not decide upon these operations, before acquiring the perfect certainty that no other organ is affected, that there are no engorged glands in the axilla or under the clavicle, that the whole disease is confined to the gland.

We may hope for a complete success if the scirrhus be lobular, perfectly circumscribed and easily enucleated. But we should expect such a result, with but little confidence, in a case where the scirrhus is ramified, radiated, or of the simple or disseminated ligneous species. Only as it is one of the tumours of the breast which causes the greatest suffering, we remove it with the sole view of prolonging for a few months the life of the patient, or to render her sufferings less insupportable.

II. *Encephaloid Tumours.*

Although the encephaloid productions are met with in all parts of the body, the mammary region is more particularly their seat of predilection. In fact, no where except in the testicle, does the cerebriform cancer so often occur as in the breast. As the general characters of cancer are discussed elsewhere with perfect precision and clearness, I shall not attempt their description here; merely remarking, that the encephaloid tumours of the breast have presented to me two species quite distinct in their structure.

a. Tuberos or solid encephaloid disease.—In a considerable number of women, there are observed, in the midst of the mammary tissue, clusters of substances, as if encysted, and having all the characters of the fibrinous tumours before described, but differing in this that rapidly increasing they finally contract adhesions with the skin, causing its absorption, and soon assume a varicose, reddish violet hue. Upon dissection they appear of a firmness comparable to raw potato, without any apparent elasticity, formed entirely by a perfectly homogeneous and completely solid albuminous mass. No partition, no fibre, no vessel appears to traverse them. They appear confounded with the neighbouring tissues, instead of being inclosed in a cyst, as is very often the case with the fibrinous tumours.

b. Fungous or medullary encephaloid disease.—The fungoid tumours, first described in England by Hey, Abernethy, Wardrop and Sir A. Cooper, are, as we now know, nothing but the encephaloid tissue of Laennec and the French surgeons. Now, these tumours have presented themselves to me rather often in masses of a reddish or yellowish gray, more or less soft, breaking down under the finger, and apparently composed of filamentary or vascular threads, mingled with a more or less proportion of concrete albumen. But I have also several times found the tumour, composed of purely fungous tissue in its most projecting part, and

of tuberos tissue, perfectly unchanged at its base. Sometimes even the separation has been so distinct that one might easily believe in the superposition of one tumour upon another of a perfectly different nature. I have, besides, followed the disease in several women in whom the tumour which finally assumed the fungous form had preserved for a long time its hardness and all the other characters of the tuberos tissue. Must we then conclude with some modern anatomo-pathologists that the encephaloid tissue, like the tuberculous matter, exists primarily in the crude state, and that it assumes the fungous aspect only after being softened? I cannot admit this explanation, unless we renounce the name of tissue, characterising these tumours; whilst, as long as it preserves the tuberos state it is impossible to establish the least trace of a texture either vascular or fibro-cellular. In allowing the tuberos variety to be nothing but scirrhus, and the fungoid only its transformation into cerebriform tissue, we shall make no further progress, for there really exist very well marked distinctions between these two varieties of tumours of the breast.

However this may be, the encephaloid tumours of this part are developed with immense rapidity. Six months or a year are sometimes sufficient for all their phases. Under the form of tumour before ulceration, they are known by the fungoid projections scattered here and there, in front or towards the axilla, by their indolence, by the rapid implication of the axillary glands and by the venous hue of their summit; and after ulceration, by their frequent hemorrhages, by the fungous, cauliflower excrescences which soon spring from it, and which increase and tumefy with astonishing rapidity. They may besides acquire a considerable volume. M. Denouvilliers (Thesis no. 285, Paris, 1837) cites an example of eight inches in one diameter, and weighing, despite the natural lightness of the tissues, not less than four pounds. I have already spoken of a tumour weighing seventeen pounds, which many distinguished observers thought encephaloid in its nature. I have myself seen one of the size of an adult head, and it is quite common to see them acquire the size of two fists or an infant's head.

No possible medication can arrest the progress of the encephaloid disease. To leave it to nature, or extirpate it is the only alternative, as in scirrhus, which the surgeon possesses. In leaving it to itself, we are sure that the patient will succumb in a few months. In extirpating it, we have to fear its reproduction with renewed intensity. It is, without doubt, the tumour which is reproduced with the greatest obstinacy. The viscera are apparently healthy, no one function appears troubled, the general health is excellent, there are no engorged glands, the tumour is neither ulcerated nor degenerated, the subject is young and full of strength, the whole mass is removed together even with a somewhat large portion of healthy tissue, the tumour cicatrises with rapidity; and yet all this does not present the appearance in a few weeks or months of new tumours either around the cicatrix, in the axilla, or in the visceral

cavities! All this I have seen perhaps fifty times, but I will mention only two examples. A woman aged thirty-six years, well formed, of moderate flesh, always having enjoyed perfect health, was admitted under my care at La Pitié, in 1832, for an *enlargement* in the right breast, existent for eight months. The tumour was of the size of the fist, and offered all the signs of cerebriiform disease, not yet ulcerated. I extirpated it; we saw quite clearly that the tumour removed by this operation was surrounded by half an inch of healthy tissue. The lips of the wound were approximated and maintained in contact without difficulty: no accident supervened, the cure appeared complete at the end of a month, and the patient wished to leave the hospital. A fortnight later a small mass, the size of a lentil, could be perceived under the skin, an inch above the cicatrix. Similar grains soon showed themselves towards the axilla, then under the clavicle: like tumours then began to accumulate upon the side of the chest, and increased so rapidly as to stifle our unfortunate patient in less than four months.

A lady of Abbaye-aux-Bois had in the left breast a fungoid tumour which had ulcerated several months back; it was however, perfectly isolated, movable, and nearly the size of the fist. The patient, of considerable corpulence, wished at all risks to be freed from this nest of infection. I practised its extirpation, cutting at the same time deep into the healthy tissues. There were no unpleasant consequences, and the wound cicatrised regularly. But hardly was it closed, when there appeared on the whole left side of the chest a quantity of small tubercular tumours, some superficial at the surface of the dermis, and others subcutaneous, about the size of hemp-seed; of these I counted twenty-two; some never exceeded the size of a grain of pepper, while others rapidly acquired the size of a filbert, a walnut, or even that of an egg. This unfortunate lady so tormented all the surgeons to operate again, that she finally found one sufficiently bold to undertake it, and she died four months after the second extirpation of her cancer!

Must we conclude from these remarks that the encephaloid tumours should be left to themselves? Such is not my opinion. Without the operation we can cure no one, but with it I think a few women may be saved. Among those whom I have operated on, there are several who continue in good health, though after a lapse of ten, six, four and two years. There is one among others whom I meet quite often in the Rue de Sèvres, where she keeps a butcher's shop, and who has an enormous mass of perfectly well marked cerebriiform disease. If then there be no reason to believe that similar tumours or alterations exist elsewhere, if the woman present none of the symptoms of the cancerous cachexia; if the disease appear absolutely local and susceptible of removal in totality without too much difficulty or loss of substance, we may decide in favour of the operation. In the contrary case it is better to restrain ourselves to palliatives, in order not to appear *to kill the patient in wishing to save her*.

§ III. *Colloid Tumours.*

The colloid tumours are globular masses slightly greenish or bluish, of the consistence of jelly, more or less solid, and subject to a numberless variety of volume. I have often observed this production in the testicle, and under the form of enormous masses mingled with the cerebriform tissue in tumours of the leg or of the thigh. I also observed it once in the quantity of several pounds in an enormous sarcoma, occupying the whole of the forearm and the lower third of the arm. But it is upon the shoulder that I have been able especially to study this affection. I have never met with it in the breast unless accompanied by scirrhus or cerebriform productions. It would be very natural to suppose the colloid tissue to be always combined with scirrhus or the cerebriform disease, as its independent and primitive existence as a tissue is doubted by very distinguished anatomo-pathologists. I am, however, for my own part inclined to think that the colloid tissue belongs neither to the scirrhus nor the encephaloid. It has seemed to me that this matter was only the second degree of a production of much greater consistence. Thus in those enormous tumours of the shoulder, giving to the upper extremity the appearance of a leg of mutton, and of which science now possesses about thirty examples, I have found them before being softened, to be composed of hard, fragile, glandular masses, presenting, upon being broken, the appearance of tender turnips or cooked apples. In two or three tumours which I have examined, and published the observations, (*Arch. Gén. de Méd.* t. xi. p. 570-579, 1826,) these masses, divided by very thin partitions, appeared to have destroyed every thing, muscle, cellular tissue, fibrous capsule, and even the humerus itself, which was separated in its superior half. Several of these masses were transformed into matter purely colloid; so that these two kinds of productions appeared evidently to be two degrees of the same affection.

Would it not be to this matter disposed in the form of sheets, that the tuberculous productions before spoken of, are to be referred? Then we might say that in the breast the tuberculous production originates, by softening the cerebriform tissue, while every where else, its dissolution produces the colloid.

I do not pretend to conceal the objection to this supposition, and I am the first to acknowledge the force of it, that the simultaneous existence in the manner of the colloid, encephaloid, scirrhus tissues and tuberculous productions, a union which I have often seen, seems certainly to indicate that in these instances the productions were at first dissimilar. It is sufficient to say that the colloid productions are perfectly as obstinate to therapeutical means as the encephaloid or scirrhus, and have an equal tendency to reproduction: whether they constitute a distinct form of cancer, or are only a degree in the developement of the fungoid disease, the same

rules are applicable to their prognosis and treatment as in the encephaloid or scirrhus affections.

§ IV. *Melanotic Tumours.*

The same remarks are applicable to melanosis, that we have already made upon the colloid disease, as, to whether melanosis is actually a particular accidental tissue rather than a modification or transformation of the tumours previously examined.

Having met several patients, with melanotic tumours, either in the crude state, or in that of putrid dissolution, and of a colour as black as truffles, I am forced to allow an independent existence to the melanotic disease. Having, however, never met with it except under the form of patches or small cutaneous or subcutaneous tumours, and never, except in patients having the same disease in many other parts of the body, I do not think it necessary to treat the subject in detail while upon the tumours of the breast. It is, after all, a disease seldom local, nearly always accompanied with a deep constitutional alteration, and against which surgical means are almost always inefficacious.

ART. 5.—*Conclusion.*

After studying the different species of tumours of the breast in an anatomical view, we must consider briefly their nature, mechanism and peculiar treatment.

§ I. As regards their mechanism, the tumours of the breast are divisible into three classes. In one comprehending the hypertrophied and simple indurations, we find only the elements belonging to the part, elements whose nutrition has simply been changed or denaturalised. In the other, the degenerations, new elements have been deposited in the normal tissues, but with more or less intimate combination under the form of disseminated parcels. In the third and last, substances have escaped from their natural canals and receptacles to be collected in more or less considerable quantity between the different organic layers of the mammary region. So that the tumours of the breast arise; 1. from an exaggerated or unnatural nutrition of the tissues. 2. from infiltration of certain morbid elements into the different constituent parts of the mamma: 3. by effusion in deposits or collections of some one of the substances which naturally or accidentally arrive into the part.

§ II. As regards their nature, tumours of the breast actually form only two classes. The one being really or apparently unsusceptible of malignant transformation, the other ending almost inevitably in cancerous disease. Under the first class we include the different sorts of cysts, hydatid, mucilaginous or sero-sanguineous, the fibrinous, tuberculous, cheesy and osseous tumours. The ligneous and fibro-scirrhus degenerations, the encephaloid, colloid, scirrhus and melanotic productions belong to the second.

From this it appears that nearly all the degenerations of the breast are of a malignant nature, whilst its anormal productions are divided into two groups: 1. the cysts and the fibrinous, cheesy, tuberculous, or osseous tumours, which have a harmless nature: 2. the scirrhi and the encephaloid, colloid and melanotic masses, which are essentially malignant.

In this connection, a question essentially obscure, but one of the most interesting in pathological anatomy, presents itself to the mind. Whence comes it, that in a class of tumours, all resulting from the effusion of some of the materials transported by the circulating system, there are found two kinds of diseases so profoundly distinct? Might it be that the blood, the lymph, the milk, pus, or serosity, collected between the organic layers, might in time give rise equally to the gelatinous, hydatid, and sero-sanguineous cysts, and the fibrinous, cheesy or milky, scirrhus, encephaloid, colloid, and melanotic tumours? Or are there in the last four species, primitive elements not possessed by the others, elements not found in natural liquids? It is to be hoped that the microscopical researches of M. Donné upon the pus, urine, blood, and other products of the animal economy—(*Communication to the Institute*, 1837. *Researches on the milk of nurses*, 1837. *Microscopical researches on the composition of the urine*, 2d Exper. t. 1,) those of M. Turpin upon the transformations, a species of vegetation, the multiplication of the globules of the milk, (*Gaz. Méd.*, 1838,) those of M. Bonnet upon the nature and composition of morbid productions, (*Gaz. Méd.*, 1837,) and those of Messrs. Beauperthin and Adet de Rosseville, (*Bull. Méd. du Midi*, t. v. p. 266,) on the animalcula of decomposed fluids or other animal matters will some day throw some light upon this obscure point. Until then, we must allow that we know nothing satisfactory upon the origin of these diverse productions.

To my mind it is not very clear that scirrhus and the whole class of cancerous productions do never result from the transformations and degenerations of tumours primitively benign.

§ III. *General therapeutics of the tumours of the breast.*—After pointing out, as we have advanced, the treatment proper for each species of tumour of the breast, there yet remains a word to be said upon the general means to be employed in all these cases. These, both internal and external, are excessively numerous. I shall, however, discuss the value of only a few of them.

A. *Internal remedies.*—Internally, the preparations of conium have been much insisted upon. The external remedies, which have had the largest number of partisans, are loss of blood, the resolute ointments, compression, caustics, and the knife. It is in this connection, that the diagnosis of the nature of these tumours demands especial attention, as it is essential not to confound those of a perfectly harmless nature with the malignant. That the extract of conium, or the iodine, arsenical, or opiate preparations, have in some cases produced the disappearance of a gland-

ular or fibro-cellular hypertrophy of the breast, a neuralgic induration, some kinds of the gelatinous or some sanguinous cysts, or some fibrinous or tuberculous tumours, I will not deny : but it is doubtful if a scirrhus, encephaloid, colloid, or melanotic tumour, arising either from transformation or original growth, has ever disappeared under a similar treatment.

1. *Cura famis*.—That by weakening the patient, subjecting her to a severe diet, to the use of simple water as drink, in observing strictly in fact the *cura famis*, Pouteau (*Œuvr. Posth. t. i. p. 68*), and some others have succeeded in similar cases, is rigorously conceivable. It is even possible that by these means they have arrested the progress or really diminished tumours really cancerous, so as to give hopes of their final resolution : but, whatever Pearson may say, no complete cure has ever undoubtedly been obtained by this method. The tumour does not delay to develop itself anew, as soon as the patient is permitted to resume a more substantial regimen. The lady, of whom Pouteau speaks, was herself in this condition.

2. *Debilitants*.—That which I have said of the *cura famis* applies, in all its force, to the antiphlogistic treatment properly so called, hailed with a species of enthusiasm among us, from 1815 to 1830, and still regarded by some persons as efficacious. It is in fact certain, that leeches applied on and around the breast, to the number of thirty to forty every week or fortnight, small monthly venesections, topical emollients ; it is certain, I say, that these means associated with laxative and alterative drinks, as Pearson (*on cancers*) advises, with narcotic or alterative pills, the preparations of iodine internally or externally, have no real effect except upon the benignant tumours or tumefactions of the mamma, and that they remain perfectly powerless before tumours truly cancerous.

B. *External Means.*

I. *Compression*.—A resource, which, for my own part, I was very much disposed to employ, is compression, so lauded by Young (*New mode of Compression, &c.*, London, 1818), and repudiated by Sir Ch. Bell in the name of the surgeons of the Middlesex Hospital in 1809. Compression, as a remedy in cancer of the breast, was completely forgotten in France when M. Recamier, (*Recherches sur le traitement du cancer, &c.* Paris, 1829) attempted to restore its employment. The experiments which I have performed, and the numerous observations I have collected, agreeing with the theories upon this subject, have fully convinced me that it is rather injurious than useful in tumours decidedly cancerous. Advantageous in cases of simple hypertrophy, dissipating also some of the cysts and inflammatory degenerations as well as some fibrinous, tuberculous, or milky tumours, it has no power whatsoever upon the ligneous or fibro-scirrhus degenerations, or the malignant tumours in general. No one of the cases reported by

M. Recamier in his book is sufficiently conclusive to weaken this proposition, or to affect at all the doctrine professed by Bayle, and which M. Cayol has lately discussed at some length (*Clin. Méd.* p. 331. Paris, 1833.) The error arises here without doubt, first, because they have confounded, with the scirrhi, encephaloid tumours, &c., tumours of quite a different nature; and secondly, the compression, diminishing the volume of the mammary tissues, may, by the wasting of the part, induce the belief of an actual cure. Upon the whole, bleedings, either general or local, topical emollients or resolutives, the most debilitating possible regimen, and internal remedies of all kinds, employed singly or aided by compression, are completely incapable of curing the cancerous tumours of the breast. It is important even to understand that these means, affecting the general health, give to the disease a greater power over the constitution of the individual.

From the preceding discussion, therefore, it results, that, to cure a cancer of the breast, we must produce its destruction. There is still, however, a necessary distinction to be made. I have said, further back, that, for the tumours by hypertrophy, whether of the gland, adipose, or fibro-cellular tissue, the knife was almost never necessary: that, for the cysts, whether hydatid, gelatinous, or sanguinolent, irritating injections, or free incisions, were sufficient without their extirpation. As for the fibrinous, tuberculous, cheesy, or osseous tumours, they hardly yield better than the malignant tumours to pharmaceutical remedies. Their destruction is the only remedy.

II. *Should we, or should we not operate upon cancers of the breast?* Convinced, contrary to the opinions of Monro (*Ed. Med. Essays*, vol. ii.) and of Delpech, (*Mal. Rep. Chir.* t. iii. p. 516,) that the scirrhus and encephaloid diseases are, in an innumerable number of cases, purely local, and that the fluids and solids of the economy, are only secondarily affected, I maintain that we should operate as soon as possible, and I cannot comprehend, how Mr. M'Farlane (*London Med. Gaz.* 1838,) and his friends could have been so unfortunate, as to have radically cured no single one of the one hundred and eighteen women upon whom they amputated the breast. If the diagnosis were sufficiently clear to distinguish them from any other form of tumour at their commencement, it would be unnecessary and improper to temporize, or lose precious time in experiments with other remedies, as is generally done.

The destruction of tumours of the breast is produced by caustics or the knife.

III.—*Caustics.* The actual cautery, which was once frequently employed, is at the present day exploded except by some charlatans, who make of it a subject of speculation. It is evident, in part, that this destruction of a tumour of the breast will always be more prompt, more sure, and more complete by the knife, in skilful hands, than by the most energetic caustics. There are cases, nevertheless, where the caustic may be preferred to the operation, properly so called. We are sometimes compelled to it, 1. by

the invincible repugnance of some patients to the knife; 2. when the tumour, confounded with the integuments, presents itself under the form of an irregular patch, requiring an equal destruction of the skin and subjacent tissues; 3. when the cancer is transformed into an ulceration as large as the indurated base upon which it reposes; 4. when a few nodosities or fungosities exist at the bottom, or upon the borders of a wound, the result of an operation already practised. In all these cases the caustic may destroy, in one or several applications, nearly as completely as the bistoury, the whole thickness of the diseased tissue, and it possesses the advantage of leaving a wound which granulates quickly and generally cicatrises with rapidity. Among the most powerful caustics, which it may be well to employ, there are distinguished the *powder of Rousselot*, the *paste of Père Reôme*, for which latterly have been substituted, the *potassa cum calce* and the *paste of zinc*. I need not mention that arsenic, being liable to absorption, is employed at too great a risk, now that the potassa and chloride of zinc have been received into practice, with properties at least equal.

A paste of equal parts of potassa, and quick lime in brandy, spread upon the surface of the tumour, in the thickness of several lines, more or less, according to the desired effect, destroys the tissues in a few hours, in cutting them like a sharp instrument. This caustic, which has the inconvenience of softening and spreading a little, has appeared to me in consequence, not as convenient as the zinc pastes. This paste, properly prepared of 100 parts chloride of zinc, 50 of water, and 50 of farina, all well mixed and triturated, may be spread in a patch, having the elasticity and partly the colour of the caoutchouc. It may then be cut, like a plaster, of the desirable thickness and size, and applied exactly upon the tumour to be destroyed. Supposing the epidermis previously removed, we may be sure that the zinc paste, after two or three days continuance, will destroy perpendicularly the tissues, to twice or thrice its own depth without extending the least in circumference. If after the fall of the eschar, to be expected from the sixth to the twelfth day, there still remain at the bottom of the wound some cancerous portions, we shall be rid of them by another application of the zinc. What is especially remarkable in the action of this caustic, is, that under the eschar it leaves a vermilion coloured granulating wound, having a decided tendency to cicatrisation, even when situated upon a cancerous base. We must, therefore, give it the preference in cases of tumour of the breast, which we do not intend to destroy by the knife.

IV.—*Operation*. If patients are generally frightened at the prospect of the operation, it is because its pain and danger are very much exaggerated. That it really was dreadful when the surgeon passed the hot iron over the wound after each incision of the knife to arrest the hemorrhage, or used a knife heated to a white heat, or a horn soaked in aqua fortis, is easily conceivable. But at the present day, when the removal of the breast is reduced to its greatest

simplicity, there is nothing in it really cruel; one or two minutes are usually sufficient to terminate it, and often the pain is assuredly less than that from caustic. Imagination can hardly conceive the horrible sufferings described by patients under the zinc paste or other escharotics. These pains, which continue sometimes twenty-four or forty-eight hours, are sometimes so violent, that I have seen patients who have said that they would prefer to undergo twenty operations.

The dangers of the extirpation of the breast have been strangely magnified by Monro and some other surgeons. Practised under favourable conditions, this operation is only rarely followed by serious consequences; there results generally but a slight reaction, and the mortality is not more than one in thirty or forty. Of seventy extirpations of tumours *where the disease was still local*, which I have performed, I have only seen a fatal result in two cases. No doubt if the operation be postponed till the general health be deteriorated and secondary tumours formed in the axilla, under the clavicle or in the visceral cavities, there is every thing to fear from the action of the bistoury. But in such cases, what can be expected from caustics or compression?

To advance that the use of caustics and compression gives greater assurance against relapse than the knife, appears to me so devoid of proof, so contrary to all kind of reason, that I do not consider myself called upon to combat seriously such an objection. It must force itself upon the mind of every one that the compression of a cancerous tumour is more calculated to promote than to prevent its absorption into the internal organs, or its reproduction upon other parts of the body. But this is an opinion which has been emitted under the form of assertion, supported by no proofs, and certainly is not worth the trouble of a refutation. When the operation is reproached as cruel, painful, subject to frequent failure, I can conceive it, but I do not comprehend how it can give less security against the return of the disease than caustics, and especially compression.

To conclude then,—diet and antiphlogistic treatment, internal medicaments, topical resolatives and compression for all the benignant tumours, before recourse is had to mechanical or chemical means of removal: the caustics, in women who refuse absolutely the knife, for the adherent and slightly thickened patches of the disease, or for its secondary vegetations; the pure and simple extirpation, and that the soonest possible, for all the other cases, for all tumours really solid and all cancers;—such, in fine, is the treatment to be followed in the different classes of tumours of the breast.

CHAPTER II.

DISEASES OF THE MAMMÆ IN THE MALE.

Remaining in the male, in the rudimentary state, throughout its existence, the mamma is exposed to but a small number of diseases. It is true we have the example (Nouv. Bibl. Méd. 1828, t. 1, p. 420,) of a ward-tender of the Hospital St. Louis, who had nearly as much breasts as a woman. M. Renaudin has published (Soc. Méd. d'Emul. t. 1, p. 397,) the case of a boy who was in the same situation. I have myself seen several examples of men offering a very great size of the mammæ. It would appear also that the disease was very common among the Greeks, as Paul of Ægina speaks of it and its treatment by the knife. But, besides that among us these are rare exceptions, it must be added, that in these cases the breast is principally formed by fat rather than by an actual development of a mammary gland.

Nevertheless, there are observed in the male breasts several of the affections so common to females. I have seen for example abscess, indurations and true cancerous tumours of this part.

The abscess of the mamma in the male, is usually developed by some external violence. A municipal guard received, in the troubles of the month of June, a ball upon the plate of his uniform, from which a contusion and deep-seated abscess of the breast resulted. In another case this accident had been produced by the frequent friction of the breast against a hard body. And in another, finally, it was attributable to the fall of a piece of stone upon the part. It is nevertheless true that these abscesses appear without appreciable external cause. They are often observed in young boys towards the age of puberty. I have thought that the submammar, and the abscess of the areola were the most frequent species in the male sex. I have never seen but a single example which was actually subcutaneous. The mammary gland in the male is so dense and has so little thickness, that inflammation of it becoming purulent can hardly form an effusion except between it and the chest or in the external cellulo-adipose tissue. These collections never acquire any great volume. Their progress is generally quite slow, and their diagnosis is almost always extremely easy. They are not exposed to the unpleasant consequence of the same affection in women; lactation not being present to supply the irritation or to prevent the granulation. Thus they conform nearly to the usual phlegmon, and require merely the treatment proper for this latter.

The induration of the mamma in the male sex is an affection, so to speak, peculiar to youth; it is seen more especially between the ages of ten and fifteen. It appears under two forms, the acute and the chronic, of which the former is much the more common. Patients experience an itching heat, and often even a dull fatiguing pain in one of the breasts. Examining these parts, the nipple

appears more protuberant, and the colour of its areola is evidently deepened. The gland itself is thickened and as it were raised up, and its integuments are more or less red and sensible. Every thing thus indicates that the inflammation has attacked the mamma itself, and this inflammation is often the origin of the above mentioned abscess.

It is, however, a pathological state easily mastered, quite often by emollient cataplasms alone. General bleeding, a few applications of leeches, would nevertheless be indicated if the activity of the disease or the constitution of the individual demanded a more active treatment.

The chronic induration differs from the acute only in the absence of pain, sensibility, and inflammatory coloration in the region. The mammary gland is hard, unequal, thickened, and movable, but requiring a certain force to cause pain. In this state, it might easily be mistaken for a scirrhus, and I have several times seen it treated as such by quite distinguished practitioners. One young man, aged seventeen years, had had this species of induration four months; his physician prescribed Störck's extract of hemlock internally, carrot poultices, and finally Vigo's plaster to the tumour. The cure took place in two months, and he thought he had triumphed over a cancerous disease. Nearly all these indurations cease in a few weeks to the usual resolute medications. A venesection, leeches, purgatives, bitter infusions, cataplasms of linseed meal at first, and afterwards friction with iodine or mercurial ointments, and finally compression, rarely fail of producing the disappearance of these tumours. If this induration have appeared at the time of puberty, it is very probable that the progress of age alone will be sufficient for the cure.

Scirrhus.—I have thus far seen no cancerous tumours except the scirrhus of the male mamma. Bartholin, (*Bonet*, t. iv, p. 451,) who speaks of the extirpation of the mamma in a man; M. Sedillot, (*Presse. Méd.* t. i, p. 140,) who recounts two similar facts, and M. Petrequin, who, visiting Padua, heard an account of the extirpation of the male mamma, all use the word scirrhus as designating the disease requiring the operation.

It is a disease, which I have myself observed five times, and of which Dr. Warren, (on Tumours, &c.) mentions two examples: in one of the cases, the tumour, the size of the fist, left us in doubt after the dissection whether it was an encephaloid tissue in the crude state, or a true scirrhus: however this may be, I have never seen, and neither do writers quote any examples of the dissemination of these tumours, or of their being reproduced in the viscera or other parts of the economy in men as in women. I must say, however, that one of my patients had in the corresponding axilla a tumour of the same bad character: except these differences, scirrhus in males follows the same course and terminates in the same manner as in females. It should consequently be submitted to the same treatment, and the same remarks are applicable; every thing,

moreover, indicates that the extirpation of the tumour offers more chances of cure in the male than in the other sex. I have operated upon four of the patients I have mentioned, and in none have I had any return of the disease.

Cysts of the male breast.—I have met with but a single instance of a cyst in the male mamma, and I do not know that any other practitioner has published any example; that which I saw, was of the size of a child's head, developed without any assignable cause, without pain or inflammation; it occupied the external part of the right breast of a young peasant, aged fifteen years, and had acquired the above size in less than a year. Its parietes were thin, without anormal coloration, and furrowed by varicose veins. At first it gave the idea of a firm hypertrophied gland, as is observed in young girls from fifteen to twenty. Its transparence equalled that of a hydrocele of the same volume; a puncture, which I made into it, emptied it perfectly of about six ounces of a slightly yellowish serosity. I injected two drams of tincture of iodine in an ounce of water; six days after I incised, and treated in the same manner, a collection, which was reproduced at the external and upper part of the original tumour; it all went off as in a hydrocele, and the adhesion of the parietes was perfect at the end of three weeks. This is then the treatment of these great unilocular cysts: if there should occur one of the other species in a man, it must be treated by the same surgical means as in one of the other sex.

CHAPTER III.

DISEASES OF THE MAMMA IN NEW-BORN CHILDREN.

The breasts of young infants are subject to a very singular tumefaction: most generally, after augmenting and being accompanied with a slight inflammatory state, the tumefaction subsides without remedies; at other times, however, a rather severe pain is present, the skin becomes red, and an abscess is the result. The malady has this peculiarity, that it imitates, to a certain degree, the milk congestion of pregnant or puerperal women: and often we can cause the exudation, by pressure of the nipple, of a liquid truly milky in nature. M. Donné has demonstrated the existence of all the elements of milk, and the chemical reagents have confirmed our prior views upon the nature of this liquid. It must, consequently, be admitted that new-born children are liable to a congestion of milk like pregnant or nursing women, and that this congestion should be submitted to the treatment pointed out from inflammations of this part in general. The liniment of ammonia, of belladonna, or cataplasms either resolutive or emollient, according to the

degree of irritation, would be the principal means to be essayed, with all the greater chance of success that the disease has a strong tendency to resolution.

CHAPTER IV.

OPERATIONS REQUIRED BY THE DISEASES OF THE MAMMA.

Among these operations, only those requisite for the removal of tumours require any separate mention. The incisions and punctures of which I have spoken in treating of abscesses and cysts require no particular detail.

ART. 1.—*Amputation of the Breast.*

The operation known under the name of amputation or *extirpation of the breast*, is the only one which I propose to examine here : ranked among the capital operations of surgery, it demands all the precautions of general rules, regimen, preparations and dressing. After what I have said before, it is useless to recur to the cases which admit of its application, the conditions which render it favourable, its advantages and disadvantages.

The extirpation of the breast is performed by different methods, the differences consisting chiefly in the position to be given to the patient, the form and direction of the incisions, and the mode of arresting the hemorrhage and cicatrising the wound.

§ I. *Position of the Patient.*

No doubt, as is done by some surgeons, it is possible to remove tumours of the breast, the woman being placed upon a chair or stool ; but this position exposes more the patient to syncope than a horizontal one, and requires the surgeon to maintain a position which must be very fatiguing if the operation be at all long or difficult. The patient should therefore be placed upon a bed or operating table properly furnished. In this position it is unnecessary to put any cushion in the axilla to push forward the gland, as Bidloo recommends, or to keep the arm separated from the side by a cane, as directed by Mr. Samuel Cooper, (Surg. Dict. p. 799, 4th edit.) That the head be sufficiently raised, the side of the tumour inclined to the operator, the arm carried slightly upwards and backwards, and a sheet passed behind the chest and under the mamma to protect the bed and dress of the patient, are all the rules that are indispensable. An assistant holds a compress before the eyes of the patient and restrains the motions of the head and shoulders : another takes charge of the arm of the diseased side ; and

a third is required to fix the pelvis and the arm of the sound side. A fourth keeps the parts tense, and absorbs the hemorrhage with a sponge, as fast as the incisions are made. A fifth presents the necessary instruments.

§ II. *Incisions.*

The incisions, necessary for the removal of the tumours of the breast, cannot always be planned in the same manner; it is evident, that if the skin be so much implicated as to require its removal, they must have different forms in different cases. It is therefore only in the tumours entirely independent of the integuments that we can sometimes choose one form in preference to another. No one, at the present day, would advise the passing of two wires under the tumour to raise it and to remove it at a single sweep, (*Heister, Inst. de Chir.*, vol. iv. tab. 22, 23); to add to these wires a tightly bound thread, to benumb the part; to seize the cancerous mass with the double hook, the *bident* of Helvetius, or the *claws* of Hartman, before its extirpation. It is the same with the circular incision described by Dionis, the crucial recommended by others, and the T incision adopted by Chopart, (*Mal. Chir.* t. 2. p. 45, 46). Unless there be some particular indication, we confine ourselves to the simple or the elliptical incision; the simple if possible or proper, to preserve the integrity of the integuments; the elliptical, if from any reason it be necessary to remove any portion of them along with the tumour. It has been proposed to give the incision a crescentic form, with the view of covering the wound, as it were, with the superior flap, but on reflection, this method, so boasted by M. Galanewski, (*Journ. des Progrès*, new series, t. 1, p. 236,) and which I have myself praised, (*Med. Operat.* t. ii, p. 212,) is really of no advantage whatsoever in the majority of cases.

To make these incisions we use neither the razor nor amputating knife, nor bistoury with large and square extremity, once imagined by Dubois. The cervix bistoury for the integuments, and the straight for the remainder of the operation, are all-sufficient, and fulfil better the different indications than all other instruments at present known.

The direction of the incision, is another point upon which surgeons are decided in opinion. Without admitting with Bell, (*Sys. of Oper. Surg.* vol. ii. p. 133,) that it should always be perpendicular, or with others that it should always be transverse, or with Pimpernelle that it should always follow the direction of the muscular fibres, I would say that we may, according to the individual case, follow the precepts of each of these surgeons. In all cases, however, the transverse incision could only be preferable where the tumour is very elevated, or has its largest diameter decidedly in that direction. If immediate union should be attempted, and there be no line of disease towards the axilla, the incision parallel with the axis of the trunk is preferable, as the most favourable to the

application of the sparadraps and other uniting means. In nearly all cases, the oblique incision will be found the preferable, not because by this means we avoid any injury to the pectoral muscle, but because we can the more easily penetrate towards the axilla, as far as the disease has advanced, and because the upper integuments fall naturally and cover the wound.

We no longer, at the present day, commence by a semilunar incision inferiorly, in order to slide the knife upwards between the breast and the tumour, and bring it down again between the integuments and the gland, as was practised by Le Dran. No body would take the pains to mark the line of the incisions with ink; only it is a good rule to commence inferiorly, and then the flow of blood does not hide the parts from our sight. The assistant keeps the integuments tense by traction from the surgeon; and after the division of the skin and subcutaneous tissue, the operator causes the tumour to be pulled out by an assistant or the hook, which sometimes he can manage himself. He applies his knife first to the inferior and then to the superior incision, while one assistant keeps the parts tense and another sponges the wound. Having arrived at the under surface of the tumour, he dissects it either from below upwards, from above downwards, or from one angle to another, according as it appears more easy and sure. And in order to be certain of not leaving any portion of the disease, he carries anteriorly his finger into the bottom of the wound, using it as sentinel before the blade of his bistoury. It is important, moreover, to remove a certain thickness of the healthy tissue along with the tumour, properly so called.

As soon as the principal mass is removed, the whole wound should be extensively explored, to assure ourselves that nothing remain. If some small portions of degenerated tissue have escaped the knife, they are to be seized with the finger, forceps, or hook, and immediately removed. In this dissection we are not to be deterred by fear of wounding the pectoral muscles, nor of descending quite to the ribs, for if we hope for the least chance of success, the last atom of the disease must be extirpated. But it cannot be denied, that if it be indispensable to apply the rugine to the ribs, or even to resect them as M. Richerand has done in one case, the case will be almost desperate and the prognosis very grave.

As for any accompanying tumours in the axilla, as the cord-like substances which sometimes exist in the sub-pectoral fissure, we may treat them in two manners: if the axillary tumours be purely glandular, very slightly voluminous, and we have reason to hope that they are not cancerous, they should not be touched. Authors mention several examples, and I myself have seen several cases of axillary tumefaction, terminating spontaneously by resolution, after the removal of large tumours of the breast. We may, however, establish a distinction at this point. The extirpation of tumours of the axilla does not appear indispensable wherever the tumour of the breast is of a non-malignant character. But in all the varieties

of scirrhus, the cerebriiform, melanoid or colloid disease, prudence, if not necessity, indicates that even the smallest tumours in the axilla should be carefully removed.

This part of the operation may be performed in two ways; if the accessory tumour be not very distant from the tumour of the breast, it may be laid bare by a simple prolongation of the original wound. In the contrary case, where there is considerable distance of healthy integument between the tumour in the axilla and the wound, it is better to make a new incision. After having isolated these tumours, either by the fingers or the handle of the knife or its blade, we sometimes experience some difficulty in separating their roots, they penetrate so deeply towards the clavicle or brachial plexus. In carrying the knife in that direction we have to fear wounding the large vessels; it is better, therefore, to include the whole in a strong ligature before making the incision, to separate the part entirely from the hollow of the axilla.

I need not recall to the reader, that the above rules require modification, whenever the form or size of the tumour require it. Thus for example, we substitute the semi-lunar for the elliptical incision, when it happens, as it often does in old women, from forty to fifty, that the disease is situated especially in the sub-mammar groove. In this manner, the half moon of integument does not prevent the breast from falling like a valve upon the inferior lips of the wound. On the other hand, it is evident, that in a case of malignant degeneration or tumour, it is better to remove the whole gland, even where it is not entirely invaded by the disease. As much as possible, on the contrary, should be preserved, if the tumour be non-malignant in its nature.

§ III. *Hæmorrhages.*

After the removal of tumours of the breast, as after all the capital operations, the hæmorrhage requires our attention. Some persons have advised, that the vessels should be tied as fast as divided, but this is very inconvenient, increasing very much the pain of the patient, and only deserving to be followed where the dissection is very long. I prefer to place the finger of an assistant upon the vessels as they are wounded.

To proceed to arrest the hæmorrhage, the first thing to be done is to sponge the wound. If it be true according to Petit, (*Œuvr. chirur.* t. 1, p. 266,) and Thédén, (*Prog. Ultér. de la Chir.* p. 61,) that ligatures may be dispensed with, it is no less so that compression, agaric and styptics, possess too little certainty of action to have the preference at the present day. We can only dispense with the ligature or torsion, where we have divided only a small number of little arteries, or where we intend to dress the wound with lint. After the removal of the tumours of the breast, torsion has some advantages over ligature, the wound after it being more inclined to union by immediate intention. If then, the divided

arteries be easy to expose, and we wish an immediate union, we prefer torsion, otherwise the ligature.

§ IV. *Dressings.*

In these cases, the arteries towards the axilla, or those furnished by the external mammary, should be first secured, and afterwards those from the internal angle, furnished by the internal mammary. If after their division they cease to furnish blood and retract themselves into the cellular tissue, they will be easily discovered, after sponging the wound for a moment with warm water.

To guard against the oozing of blood the surgeon should proceed immediately to the dressing. Not to close the wound until the lapse of several hours, to give time to the ulcerated tissues to reappear, is a method not generally to be adopted. Except when we have reason to fear a hemorrhage in the first few hours after the operation, the dressing should be completed on the spot.

All the arguments which have been advanced for and against immediate union after operations apply in the present case.

The ancients, beginning with Galen and Aëtius, who advised the lips of the wound to be approximated after the removal of the breast, have met very warm opponents within the last century. In following their practice, says Vacher, we assist the reproduction of the disease, and to obtain a radical cure it is better to remove the skin along with the tumour to produce the suppuration of the wound, than to close it too quickly. This difference of opinion is formed also among the surgeons of the present day. The partisans of immediate union argue that it is possible to obtain it within six or twelve days, that it prevents all reaction and any reproduction of the disease, provided no affected parts have been left in the neighbourhood of the wound. I have often attempted the immediate union after this operation, and have obtained it completely only three times; twice in men and once in a woman with tumours not larger than a hen's egg; all three subjects were rather lean than corpulent. No ligature was required. I was merely obliged to twist two small arteries in one of the patients; the wound united without suppuration, and the cure was complete the fourth or fifth day. With the exception of these particular cases the approximation of the lips of the wound has never been maintained, in my experience, so perfectly as to avoid all suppuration, and to produce the perfect union in less than fifteen days or a month. In attempting to have a union entirely complete, either by sutures or sparadraps, we run the risk, provided there be the least sanguine or serous effusion into the wound, to have all the accidents of phlegmon or erysipelas; if it appear too difficult to produce perfect contact between the deep parts of the wound it is better, as a general rule, not to close it entirely.

I have myself for a long time adopted the following practice. If the wound be very small and clean, I attempt the immediate union in its strictest acceptation; but if the edges of the wound be at all

irregular or present any tendency to a sanguineous oozing, I confine myself to an approximation with sparadraps as far as the lower angle of the wound, leaving this part open as a drain for any matters that may be effused under the skin. If I think this will not suffice, and the wound be cavernous, or if to arrest the hemorrhage I am obliged to exercise compression upon the smaller vessels, I fill the wound with small bullets of scraped lint, approximating over this its borders moderately, and cover the whole with a cloth spread with cerate, compresses and a bandage. At the end of three or four days all the scraped lint may be easily removed. The same dressing renewed each day for a week rarely fails of giving a vermilion coloured and granulating aspect to the wound, which allows us to attempt its union with great chance of success. This treatment, without contradiction, occasions the least reaction, and exposes the least to any inconvenience, whilst it allows us to cure in two or three weeks the most extensive wounds of the breast.

If a very extensive portion of the integuments have been sacrificed, and the edges of the wound remain at a great distance, we may, to avoid the inconvenience of a gradual and purely concentric cicatrization, apply to this operation some of the principles of autoplasty. Thus, the dissection for half an inch or an inch of the integuments, etc. around the wound, will allow them to yield, and be approximated as in the immediate union. A flap having its free edge in the wound, may be brought up or restrained over it, as for example in the cheiloplasty after Chopart's method. There are two methods which I have put in practice, and which are not to be absolutely rejected. It is not the same with the method which consists in covering the wound with a piece of integument taken from the neighbourhood of the wound, and twisted upon its pedicle. By this means the flap is very much exposed to mortification, besides the necessity of a second operation about as painful as the former. The experiments and observations in support of this method are so strange, that one is inclined to apply to them the old adage—*the truth can sometimes not be probable*.

Upon the whole then I would advise merely the detaching of the edges of the wound as the only use to be made of autoplasty, if I were unwilling to trust to cicatrization entirely secondary.

ART. 2.—*Bandages for the Mammæ.*

After amputation, as well as in the treatment of a number of the diseases of this organ, we are obliged to employ certain local remedies, or certain dressings which are to be maintained by bandages. Nearly all the necessary bandages may be reduced to four or five.

§ 1. *The suspensory of the mamma* is a sort of square, shallow cap, with two strings attached to the inferior angles and surrounding the waist, while two others attached to the superior one, are tied behind the neck, thus serving as support to the part when painful or hypertrophied, to maintain a cataplasm in its place, or to envelope the part when covered with cushions of lint.

§ II. *The square bandage*, which is more convenient when the dressings, do not project from the surface of the breast, or where there has been a complete ablation of this part, is arranged like the preceding; differing only in the absence of any concavity.

When we wish merely to retain a compress upon the front of the mammary region, the *triangular bandage* is preferable to the preceding: its base is fixed around the waist as I have said of the suspensory; its summit is then brought over the shoulder of the affected side, to be attached by a cord behind the chest.

§ III. *The body bandage*, maintained by suspenders, would be equally useful in such a case, but it has a great tendency either to slide upon the abdomen or else to weary the borders of the axilla.

§ IV. *The cataphrast*. Whenever a nice bandage is required either after the extirpation of the breast or for a methodical compression, I have found nothing better than a bandage uniting the bandage in figure of 8 and the cataphrast of the ancients. I apply it usually as follows:

A band of eight or nine yards is necessary; about a yard of this is allowed to hang behind the chest or is retained there by an aid, while the surgeon carries the remainder over the shoulder of the sound side, across the chest under the axilla of the diseased side, to return it posteriorly and describe circulars from the face of the chest to above the mammary regions. This band is then passed from the posterior part of the diseased axilla, above, before, under and behind the axilla of the healthy side, to make some new circular turns around the chest, and do the same to the other shoulder: the remainder of the band is then expended around the body. The head of the bandage, originally placed behind, is then brought up over the affected side and secured in front by a pin, like a suspender. This bandage extremely solid, moulds itself exactly to the parts, and possesses, when well applied, a certain degree of elegance.

If permanent compression is required upon the mamma, either graduated compresses, or pieces of agaric should be applied beneath the cataphrast; it will be rendered entirely immovable and of a complete solidity, by being covered with a band soaked in dextrine, applied like the other.

§ V. I have also used, for the compression and resolution of tumours of the mamma, *strips of diachylon*, placed as in ulcers of the leg, assisting their action by the preceding bandage.

When the gland can be isolated from the chest, being as it were pediculated, it may sometimes be compressed with a sparadrap arranged as for the testicle, *i. e.* some circularly about the root of the organ to attach others which pass across or from above downwards, thus making a sort of hood. The chest thus is not at all compressed, and the respiration is entirely free; but it is seldom that, thus made, the compression is sufficiently solid to answer the proposed end.

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